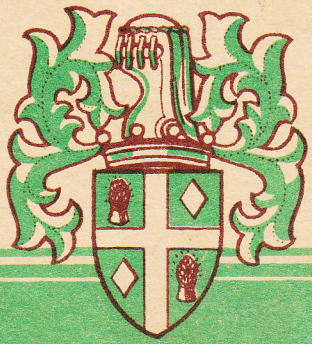
AUSTIN

A40 MODELS

RUNNING AND MAINTENANCE INSTRUCTIONS



THE AUSTIN MOTOR Co LTD
LONGBRIDGE
BIRMINGHAM

AUSTIN

A40

MODELS

RUNNING AND MAINTENANCE INSTRUCTIONS

JANUARY 1953

THE AUSTIN MOTOR CO. LTD.

LONGBRIDGE, BIRMINGHAM

BOX 41 G.P.O.

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INTRODUCTION

THIS booklet gives the running instructions necessary to ensure satisfactory operation of the 'A40' Somerset Saloon, Coupé, Sports Model, Countryman, Pick-up and Delivery Van.

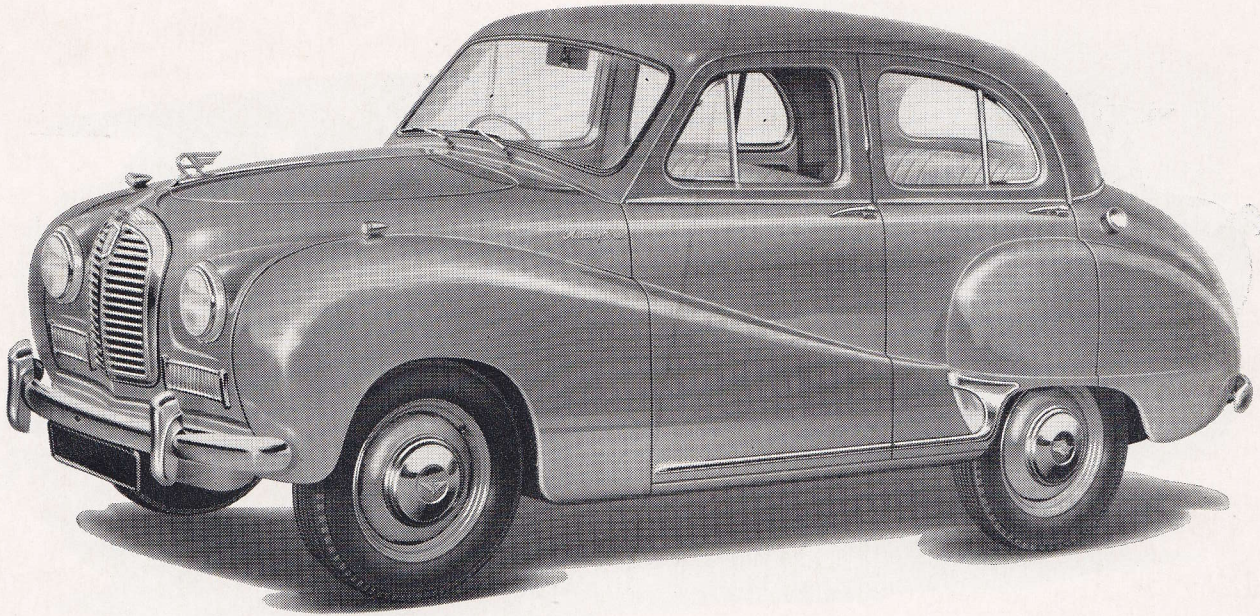
It does **not** include major maintenance attentions, which should be entrusted to the local Austin dealer, who will use only genuine Austin parts as replacements.

A Supplement has been included covering all those items on the 'A40' Sports Model which are not common to the Saloon.

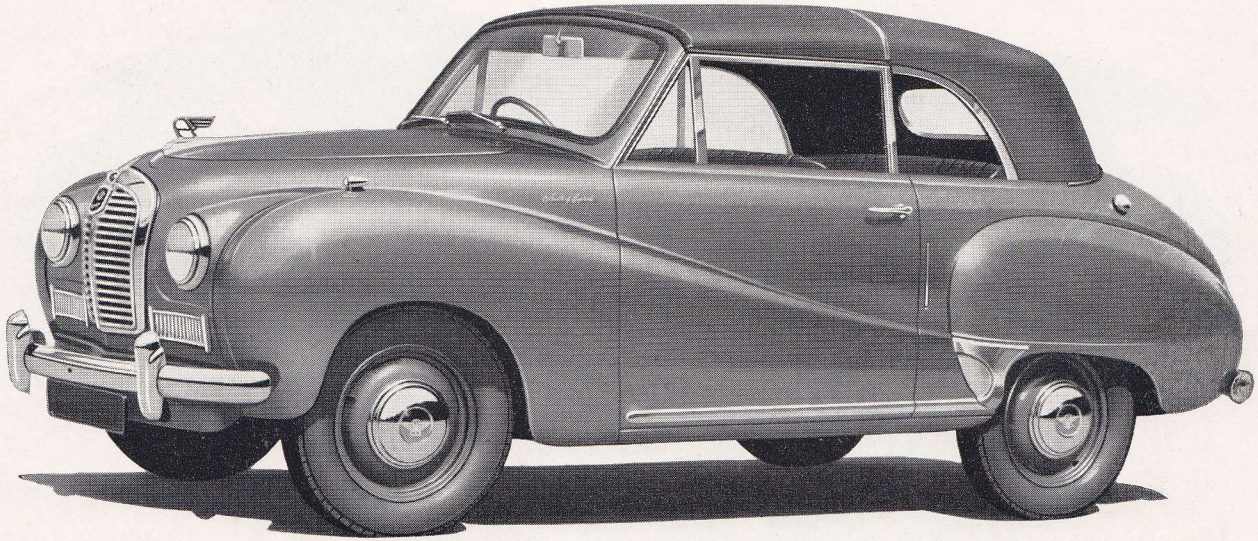
The owner should bear in mind that the warranty does not cover any failure due to inadequate maintenance, nor is it extended or varied in any way by the following recommendations.

Accessories and equipment are subject to the warranties issued by their makers, a list of whom appears at the end of this booklet.

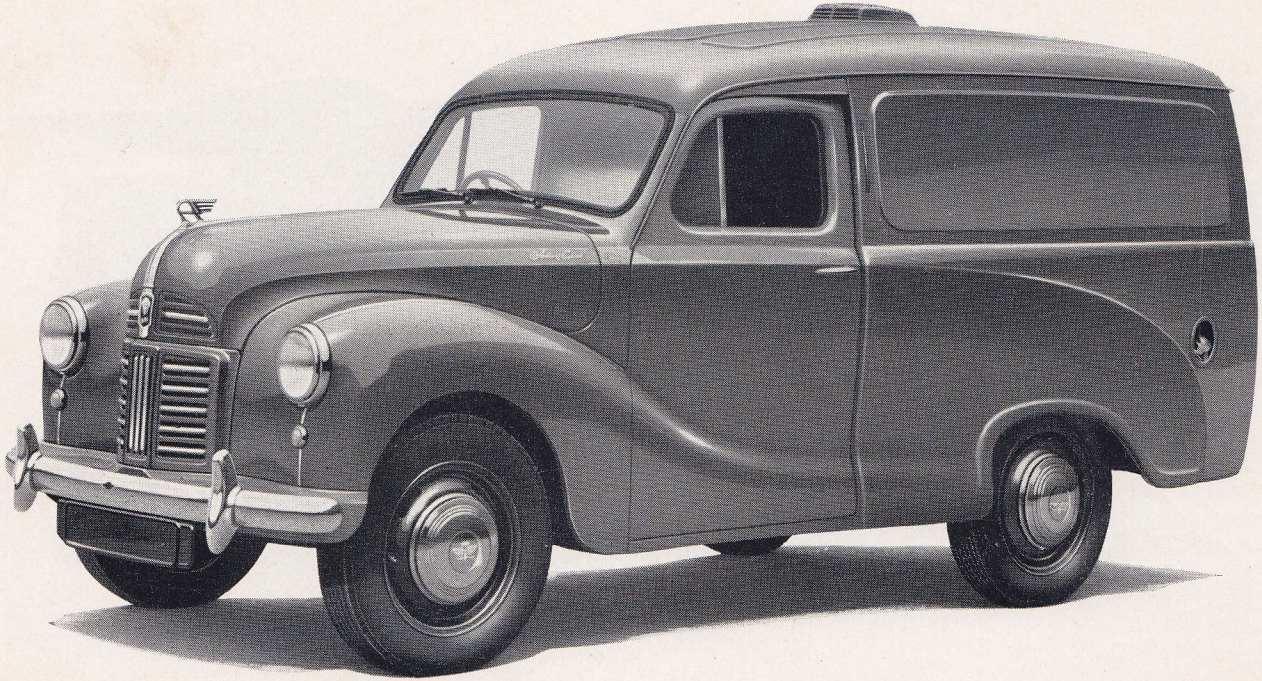
Alterations in design may sometimes occur which entails additional or varied maintenance work. It is not always immediately possible to include such details in the handbook, therefore operators are advised to keep in touch with their local Austin dealer's service department.



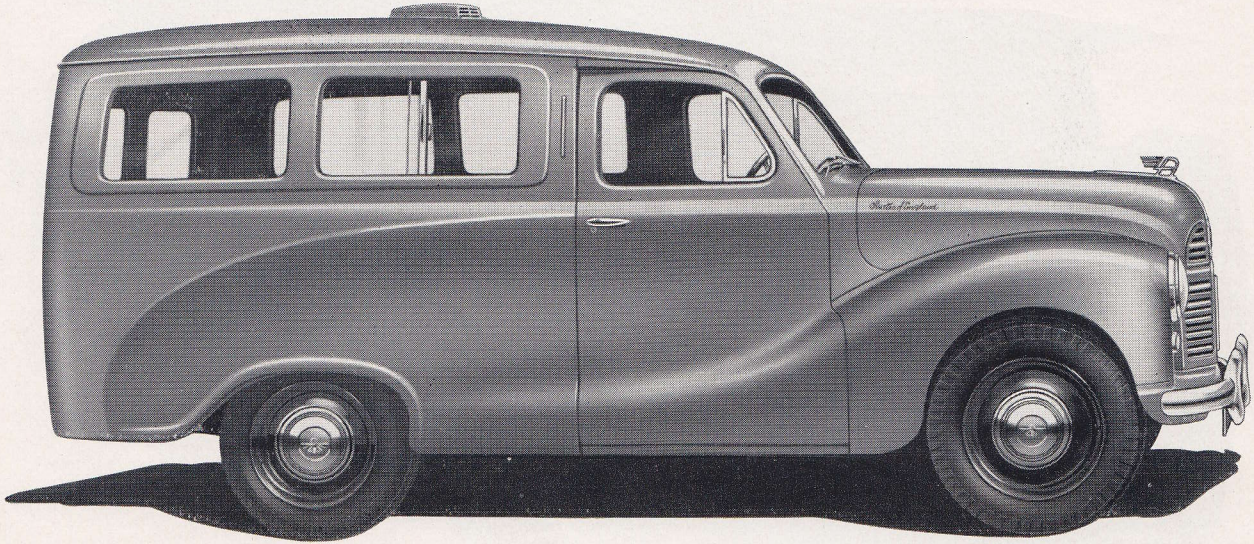
THE AUSTIN 'A40' SOMERSET SALOON



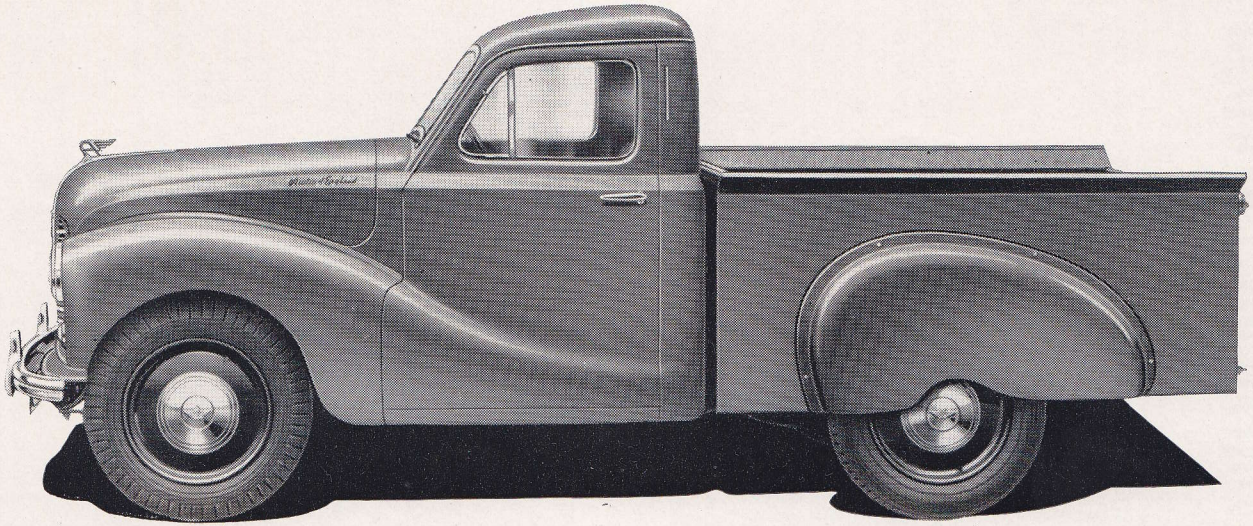
THE AUSTIN 'A40' COUPÉ



THE AUSTIN 'A40' DELIVERY VAN



THE AUSTIN 'A40' COUNTRYMAN



THE AUSTIN 'A40' PICK-UP

CONTENTS

GENERAL INFORMATION

General Dimensions

Saloon: Overall length—13ft. 3½ins. (4m. 4cm.). Overall width—5ft. 3ins. (1m. 60cm.). Overall height—5ft. 4ins. (1m. 62cm.). Wheelbase—7ft. 8½ins. (2m. 35cm.). Track (front)—4ft. 0½ins. (1m. 22cm.). Track (rear)—4ft. 2ins. (1m. 26cm.). Ground clearance—6¾ins. (17cm.). Turning circle—37ft. (11.27m.). Approx. weight—19½ cwts.

Coupé: Overall height—5ft. 3½ins. (1m. 61cm.). Weight—20 cwt. 35 lbs. Other dimensions as Saloon.

Van and Countryman: Overall length—13ft. 3⅜ins. (4m. 4cm.). Overall width—5ft. 4½ins. (1m. 64cm.). Overall height—6ft. 1½ins. (1m. 85cm.). Wheelbase—7ft. 8½ins. (2m. 35cm.). Track (front)—4ft. 1½ins. (1m. 23cm.). Track (rear)—4ft. 2¾ins. (1m. 26cm.). Ground clearance—6¾ins. (17cm.). Turning circle—38ft. (11.58m.). Body capacity (**Van**)—116 cu. ft. Load capacity—10 cwts. Unladen weight (**Van**)—18 cwts. Unladen weight (**Countryman**)—19 cwts.

Pick-up: Overall length—13ft. 2ins. (4m. 1cm.). Overall width—5ft. 4½ins. (1m. 64cm.). Overall height—5ft. 6¾ins. (1m. 70cm.). Load capacity—10 cwts. Unladen weight—18 cwts. 18 lbs. Chassis dimensions as Van and Countryman.

Engine

No. of cylinders—4. Bore—2.578ins. (65.48mm.). Stroke—3.5ins. (89mm.). Cubic capacity—73.17 cu. in. (1,200 c.c.). B.H.P.—42 at 4,500 r.p.m.; Max. torque—58 lbs. ft. at 2,400 r.p.m. Compression ratio—7.2 to 1. Firing order—1-3-4-2. Valves—Overhead, push-rod operated. Timing—Inlet opens 5° B.T.D.C., closes 45° A.B.D.C.; exhaust opens 40° B.B.D.C., closes 10° A.T.D.C. Inlet and exhaust clearances (hot or cold)—.015in. Engine No.—Located on right side of cylinder block, adjacent to cylinder head.

Lubrication

Pump—Gear type. Pressure (hot)—40-45 lbs. per sq. in. Filter—By-pass type. Sump capacity—7 Imp. pints (4 litres).

Fuel System

Pump—A.C. Sphinx mechanical type "T". Carburetter—Zenith downdraught, model No. 30 VIG-8. Choke tube—25. Main jet—90. Compensating jet—65. Slow running jet—50. Needle and seating—1.5. Pump jet—50. Tank capacity—8¾ Imp. gallons (37 litres).

Cooling System

Circulation—Centrifugal pump and fan. Temperature control—Thermostat. Normal operating temperature—164°F. Capacity—12½ Imp. pints (7 litres).

Ignition

Type—Lucas 12 volt. Coil—Lucas, type Q.12. Distributor—Lucas, type DM2. Contact breaker gap—.014-.016in. Timing—1/4 mark on flywheel. Sparking plugs—Champion N.8.B. Long Reach. Plug gap—.018in.

Clutch

Type—Borg & Beck single dry plate. Diameter—7¼ins. Pedal free movement—¾in.

Gearbox

Type—4-speed synchromesh (on 2nd, 3rd and top) with steering column mounted gear lever. Gear ratios—1st, 3.89 to 1; 2nd, 2.44 to 1; 3rd, 1.54 to 1; top, 1 to 1; reverse, 5.39 to 1. Oil capacity—3 Imp. pints (2 litres).

Propeller Shaft

Type—Hardy Spicer open shaft with needle roller bearing universal joints.

Rear Axle

Type—Spiral bevel three-quarter floating. Oil capacity—2¼ Imp. pints (1.28 litres). Overall gear ratios (**Saloon**)—1st, 20.54 to 1; 2nd, 12.88 to 1; 3rd, 8.13 to 1; top 5.28 to 1; reverse, 28.46 to 1. Overall gear ratios (**Commercial Vehicles**)—1st, 23.89 to 1; 2nd, 14.95 to 1; 3rd, 9.43 to 1; top, 6.14 to 1; reverse, 33.09 to 1.

Steering

Type—Special Cam Gear with 14 to 1 ratio. Adjustment—Screw and shim.

Suspension

Front: Type—Independent by coil springs and wishbones. Castor angle—2¼°. Camber angle—1°. Swivel pin inclination—6½°. Track toe-in—1/16th to 1/8th in.

Rear: Type—Semi-elliptic underslung reverse camber leaf springs.

Shock Absorbers

Type—Armstrong double-acting hydraulic piston.

Brakes

Foot Brake: Type—Girling Hydraulic with two leading shoes on front wheels. Drum diameter—9ins. Pedal free movement—⅛in.

Handbrake: Type—Pistol grip operating mechanically on rear wheels.

Wheels

Saloon and Coupé: Type—16×3.00 pressed steel disc.

Commercial Vehicles: Type—17×3.25 pressed steel disc.

Tyres

Saloon and Coupé: Type—Dunlop 5.25-16 Extra Low Pressure. Pressures (2 passengers only)—22 lbs. per sq. in. front; 24 lbs. per sq. in. rear. Pressures (full load)—24 lbs. per sq. in. front; 26 lbs. per sq. in. rear.

Commercial Vehicles: Type—Dunlop 5.00-17. Pressures—24 lbs. per sq. in. front; 36 lbs. per sq. in. rear.

Jacking System

Saloon and Coupé: Type—Stevenson, operated by wheelbrace from inside car.

Commercial Vehicles: Type — Screw jack to individual wheels.

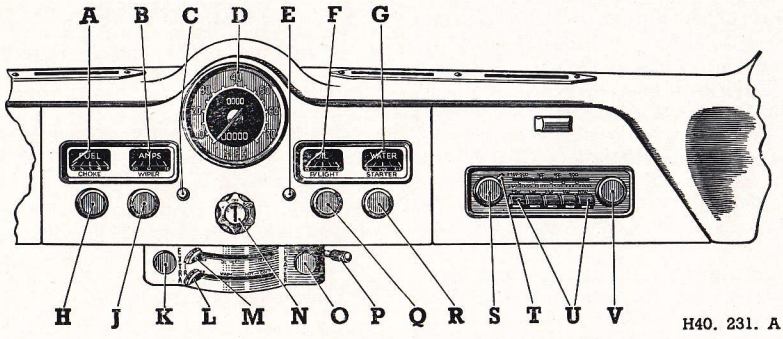
Chassis Frame

Type—Welded pressed steel with full length box section side, front and rear cross members, stiffened by cross bracing. Chassis No.—Located on frame, adjacent to the engine front mounting bracket on the side opposite to the steering gear.

Electrical Equipment

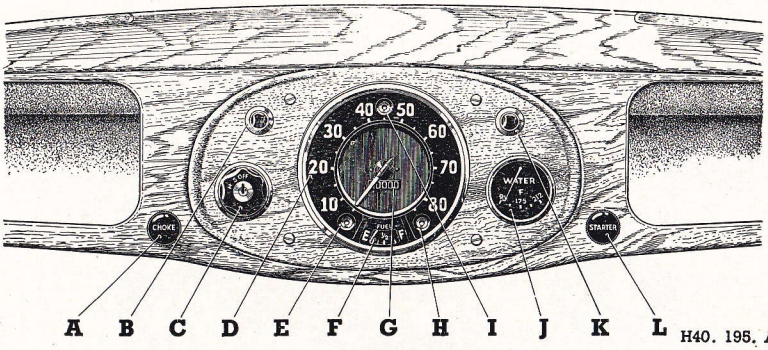
Type—Lucas 12 Volt. Battery—Lucas G.T.W. 7A. Capacity—38 amp, hrs. at 10 hr. rate. Dynamo—Lucas type C39PV/2. Starter Motor—Lucas type M35G. Cut-out and Regulator—Lucas, type RB106. Fuse unit—Lucas, type SF6. Horns—Lucas Windtone, type WT614. Direction Indicators—Lucas, type SF80. Windscreen wipers—Lucas, type CRT. Heating and Ventilating System—Smiths 3½ K.W. "Series III".

INSTRUMENTS AND CONTROLS



THE SALOON AND COUPE INSTRUMENT PANEL

A—Fuel gauge.
B—Ammeter.
C—Headlight beam warning light.
D—Speedometer.
E—Ignition warning light.
F—Oil pressure gauge.
G—Water temperature gauge.
H—Choke control.
J—Windscreen wiper control.
K—Extra air control.
L—Air control.
M—Demister/defroster control.
N—Ignition and lighting switch.
O—Heater motor switch.
P—Speedometer trip control.
Q—Panel light switch.
R—Starter control.
S—Radio on/off switch.
T—Tone control.
U—Tuning push-buttons.
V—Manual tuning control.



THE COMMERCIAL VEHICLE INSTRUMENT PANEL

A—Choke control.
B—Windscreen wiper switch.
C—Ignition and lighting switch.
D—Speedometer.
E—Oil pressure warning light.
F—Fuel gauge.
G—Mileage recorder.
H—Ignition warning light.
I—Headlight warning light.
J—Thermometer.
K—Panel light switch.
L—Starter control.

INSTRUMENTS

Speedometer: Registers the vehicle speed and total mileage. The trip figures at the top of the speedometer can be set to zero by pushing in the spring-loaded knob on the right-hand side of the heater control panel, and turning it in an anti-clockwise direction.

Oil Pressure Gauge (Saloon and Coupé): Indicates the oil pressure in the engine. It does not show the quantity of oil in the sump.

Oil Pressure Warning Light (Commercial Vehicles): Glows red when the ignition is switched on and fades out after the engine has been started. Low oil pressure or insufficient oil in the sump

is indicated by a red glow when the engine is running.

Ammeter (Saloon and Coupé): Indicates the flow of current into or out of the battery. With the automatic voltage control system little or no charge is shown when the battery is well charged.

Ignition Warning Light: Glows red when the ignition is switched "on" and fades out when the dynamo is charging the battery.

Headlight Beam Warning Light: A red glow appears when the full headlights are switched on, with the two beams full ahead. The light goes out when the headlights are dipped.

Fuel Gauge: Indicates the contents of the tank when the ignition switch is on. When the tank is being filled, switch off and stop the engine. Switch on again and the needle will record the amount of fuel entering the tank.

Water Temperature Gauge (optional extra on Commercial Vehicles): This records the temperature of the cooling water circulating in the cylinder block and radiator. The correct operating temperature under normal conditions should not be below 164°F.

FOOT CONTROLS

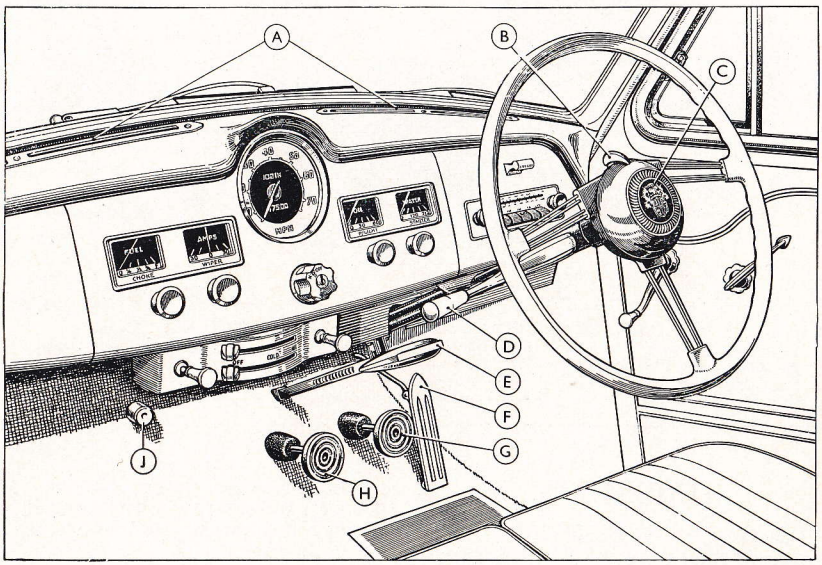
Accelerator: The small right-hand pedal which operates the carburetter throttle.

Brake: The centre pedal which operates the brakes on all four wheels.

Clutch: The left-hand pedal. The foot should be kept clear of this pedal except when engagement or disengagement of any gear is intended, or when in heavy traffic. Press to the floor for complete disengagement.

HAND CONTROLS

Handbrake: Pistol grip type, situated under the fascia panel, and fixed to the left side of the steering column. Operates mechanically on the rear wheels only.



H40. 236. A.

DRIVING CONTROLS

A—Demisting vents.
B—Trafficator switch.
C—Horn button.
D—Gear lever.
E—Handbrake.
F—Accelerator pedal.
G—Brake pedal.
H—Clutch pedal.
J—Dip switch.

Gear Lever: Should always be in neutral when starting the engine. The lever is mounted on the left side of the steering column. To engage a gear, depress the clutch and move the lever to the required position as described on page 16.

Choke Control: Pull the control out to its limit when starting the engine from cold. Once the engine is running, push in the choke control completely as soon as the engine will run evenly without its use.

Ignition Switch: Turn the key clockwise to switch on. Do not leave the switch "on" when the vehicle is stationary—the red warning lamp is a reminder. The ignition key may also be used for locking the driver's door and the luggage or load compartment.

Lighting Switch: This is the moulding which surrounds the ignition switch. Turn clockwise to the first notch to put on the sidelights, and to the second to put on the headlights. The headlights are dipped by foot operation.

Starter Switch Knob: Pull out the control knob to start, and release as soon as the engine fires. If the engine fails to start after a few revolutions, do not operate the starter again until the engine is stationary.

Direction Indicators: The indicators are controlled from the centre of the steering wheel. Normally, after the vehicle has turned a corner, they return automatically, but when only a slight turn has been made it may be necessary to return them manually with the switch.

Heater and Demister Controls (Saloon and Coupé): These are situated centrally below the fascia and provide the means for regulating the heating and demisting system. Full operating instructions are given on page 31.

Extra Air Control (Saloon and Coupé): A supply of cold air, entirely independent of the heating system, can be admitted to the car interior for ventilation purposes by pulling out the control located on the left-hand side of the heater panel.

Heater Control Switch (Commercial Vehicles): Turn to the right until a click is heard. This starts the heater fan. The further the control is turned the less will be the speed of the fan, due to the fact that a rheostat is incorporated.

Windscreen Wipers: To start the electric wipers pull out the wipers control. To park, switch off by pressing the control inwards when the arms are at the end of the stroke. Do not try to push the arms across the windscreen by hand.

In the case of the Commercial Vehicles the wipers are controlled by a rotary switch situated at the top left-hand side of the instrument panel.

Panel Light Switch: Pull out the switch control knob to illuminate the instruments. Only operates when the side-lamps are "on."

In the case of the Commercial Vehicles the panel lights are controlled by a rotary switch situated at the top right-hand side of the instrument panel.

Horn Button: Mounted at the centre of the steering wheel, and can be operated independently of the ignition switch.

Interior Light: Combined with a switch in the roof.

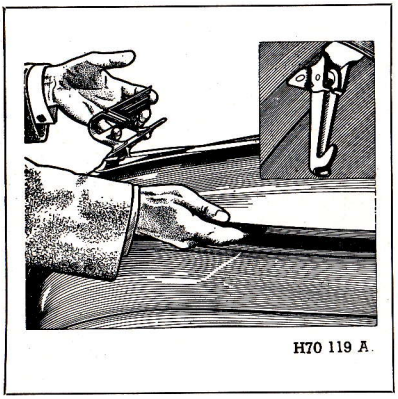
Spare Wheel: Secured at the rear of the Saloon in the luggage compartment, and under the load platform of the Commercial Vehicles.

Seating: Adjustable front seats or bench type seat in Saloon and Coupé, single adjustable seat in Delivery Van and full width bench type seat in Pick-up. The Countryman driver's seat may be adjusted and the front passenger seat squab and cushion both hinge forward to give access to rear seating.

Doors: The right side front door, the luggage compartment of the Saloon and Coupé and the rear doors of the Countryman and Delivery van may be locked with the ignition key. The other doors may be locked by lifting the inside door handles.

An additional safety lock is fitted to the rear door interior locking handles of the Saloon. This device is intended to prevent inadvertent opening of the doors, particularly by children, when the vehicle is in motion.

To lock the doors, turn the escutcheon in a clockwise direction on the left door handle and anti-clockwise on the right door handle. This can only be effected, however, when the handles are in the unlocked position.



THE SALOON BONNET CATCH

Insert the fingers and push back the safety catch.

Crankcase Oil Filler: Incorporated in the valve rocker cover. Bayonet fitting cap, with anchor cable to prevent loss.

Petrol Filler: On left-hand rear side of body; bayonet type cap, with anchor cable to prevent loss.

Radiator Cap: Screw type.

Bonnet Catch (Saloon and Coupé): To open the bonnet pull upwards and forwards on the handle formed by the "Flying A" Motif. This will have the effect of releasing the locking catch and it will then be possible to raise the bonnet an inch or so until held by a spring-loaded safety catch. Insert the fingers and push back this safety catch, when the bonnet may be lifted right up. The bonnet is held open by a stay clipped to its underside, and a small locating cup is provided in the radiator top tank to keep the stay secure when in use.

The spring-loaded safety catch is designed to hold down the bonnet while driving in the event of the bonnet not having been properly locked. When closing the bonnet a slight pressure exerted downwards on the bonnet top will help the locking catch to engage positively.

Bonnet Catch (Commercial Vehicles and Sports): To open the bonnet pull the control knob situated below the fascia panel, on the extreme right-hand side. The bonnet will rise an inch or so and will then be held by a spring-loaded safety catch, after which the procedure is exactly the same as that given for the Saloon and Coupé.

In the case of the "*A40*" *Sports* the bonnet is held open by a sliding stay which is bolted from the underside of the bonnet to the bulkhead.

RADIO

The radio, Radiomobile Model No. 4200 (optional extra on Saloon and Coupé), is operated via flexible cables by controls mounted on the fascia in front of the driver. The loud speaker is located centrally in the roof lining above the windscreen.

To switch on the receiver turn the small control on the left of the push-buttons in a clockwise direction. Progressive rotation of this control increases the volume as required. The larger control concentric with the on/off switch provides four separate tone settings, anti-clockwise for speech, and clockwise for music.

Manual tuning is obtained with the control on the right of the push-buttons and provides completely variable station selection. The knob will not, however, engage the tuning mechanism until pressed in, as this prevents accidental disturbance of a station previously selected by a push-button. The knob will then remain in engagement for manual tuning until automatically released by pressing in one of the push-buttons.

The tuning scale is divided into two sections, "Medium Wave" and "Long Wave," and either may be selected for open manual tuning by pushing in either a Medium Wave or the Long Wave push-button as required.

The five tuning push-buttons provide automatic tuning for one Long and four Medium Wave Band stations. All push-buttons may be easily reset to any Medium or Long Wave station by simple means, to suit individual requirements. Full instructions are given in the pamphlet issued by the makers with each set.

The external aerial should be extended prior to using the set. It is recommenced that it is retracted when not in use.

STARTING

BEFORE starting the engine check the oil level in the sump and the water level in the radiator. Ensure that the gear lever is in neutral and that the hand-brake is applied. If the engine is cold pull out the choke control. In cold weather the engine should be rotated several times with the starting handle. Do *not* pump the accelerator.

Switch on the ignition; ensure that the ignition warning light glows and that the fuel gauge registers; then pull the starter control firmly. Release it if the engine fails to start within five or six seconds, wait for the engine to stop rotating and then pull the starter again.

Should the engine not start after a reasonable number of attempts, check up on possible causes. Do not persist in operating the starter, as a great strain is inposed on the battery by so doing. As soon as the engine starts, release the starter and warm the engine up at a fairly fast idling speed.

Do not, under any circumstances, race the engine in an attempt to warm up the engine more quickly. Blanking off the radiator will assist the engine to warm up quickly, but always uncover the radiator before driving off. Push in the choke control completely as soon as the engine will run evenly without its use.

When the vehicle has been out of use for several days the fuel in the carburetter may have evaporated. Before attempting to start the engine refill the carburetter by operating the priming lever on the fuel pump, which is located low down on the left side of the engine.

The pumping action should be distinctly felt until the carburetter bowl is full. If this pumping action cannot be felt, turn the engine with the starting handle about one full turn, whereupon the priming lever should be free to pump.

RUNNING-IN THE NEW VEHICLE

THE Austin 'A40' is designed and built with great care to high quality standards. For that reason the owner will find that considerate treatment during the all-important running-in period will be well repaid by trouble free running and maximum efficiency throughout its life.

The following speeds should not be exceeded in the gears for the first 500 miles.

1st	2nd	3rd	Top
m.p.h.	m.p.h.	m.p.h.	m.p.h.
6–7	11–12	17–18	30

It is most important to remember that at no time during the running-in period must the engine be over-loaded, as in attempting to ascend hills in top gear at low vehicle speed. The load should be eased by changing down to a lower gear.

Fierce acceleration must also be avoided, and remember that the engine should never be raced in neutral.

On completion of the first 500 miles the running-in speed in each gear may be progressively increased, but full power should not be used until at least 1,500 miles have been covered, and even then only for short periods at a time. During this mileage a slight falling-off in engine power may develop, in which case it is beneficial to lightly grind-in the valves and re-set the valve clearances. No engine or complete vehicle can be considered fully run-in until it achieves 2–3,000 miles.

The use of upper cylinder lubricant is recommended at all times, but most particularly during the running-in period. See centre pages for recommended brands.

DRIVING

THE gearbox has four forward speeds and a reverse. Start only in first gear, which is engaged by depressing the clutch pedal and moving the gear lever away from the steering wheel and then upwards. Should the gear not readily engage, momentarily release the clutch pedal; after which, with the clutch again depressed, it should be possible to engage the gear. Gradually release the clutch pedal, at the same time gently depressing the accelerator and releasing the handbrake. The vehicle will move forward, gathering speed in accordance with the amount the accelerator is depressed.

Second gear is engaged by depressing the clutch pedal, moving the gear lever straight downwards and then releasing the clutch pedal. Ease up on the accelerator whilst changing to a higher gear, and gradually depress the accelerator when the higher gear is engaged.

To engage third gear, move the gear lever upwards into neutral, then towards the steering wheel, and finally upwards again.

Engage top gear by moving the lever straight downwards, parallel to the steering wheel.

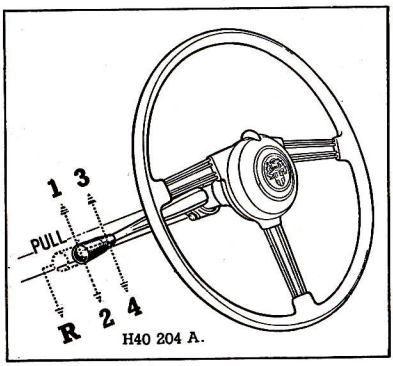
Changing down is an exact reversal of the above procedure, except that the accelerator must be kept depressed whilst the gear is being changed, in order to speed up the engine in accordance with the lower gear.

To stop the vehicle, release the accelerator, apply the footbrake and depress the clutch pedal before the vehicle comes to a standstill. After applying the handbrake and moving the gear lever into neutral release the clutch and footbrake.

To engage reverse, which must only be done when the vehicle is stationary, move the gear lever towards the instrument panel as far as it will go, at the same time pulling outwards on the lever knob, and then move the lever downwards. Remember, however, that the gearing is now lower than first gear. Consequently release the clutch slowly until the vehicle just begins to move, and then gently depress the accelerator to give the speed desired.

Do not slip the clutch instead of using the handbrake when temporarily halted on an ascent.

Before descending a steep hill it is advisable to engage an intermediate or first gear. The engine will then provide a useful braking action.



THE GEAR POSITIONS

What Not to Do

Do not pull the starter control when a gear is engaged.

Do not forget to switch on the ignition before starting the engine.

Do not continue pulling the starter control if the engine will not fire.

Do not forget to release the choke control as soon as possible after starting the engine.

Do not leave the ignition switched on when the engine is stationary.

Do not leave the vehicle in gear with the handbrake off.

Do not engage reverse gear when the vehicle is moving forwards or forward gear when the vehicle is moving backwards. Serious damage may result.

Do not slip the clutch in traffic or on an ascent.

Do not coast with a gear engaged and the clutch pedal depressed.

Do not run the engine at high speeds for the first 500 miles.

Do not race the engine in neutral at any time.

Do not run the vehicle with the radiator completely blanked off.

Do not fill the radiator with cold water when the engine is hot.

Do not under any circumstances run the engine in a closed garage or similar restricted atmosphere. The exhaust fumes are highly poisonous and if inhaled will quickly produce grave, if not fatal, results.

REGULAR ATTENTIONS

THE following is a convenient list of regular attentions which the vehicle should receive to keep it in good mechanical condition. These instructions should be closely followed whether the attentions are performed by the owner or the local garage.

The attentions under the Daily and Weekly headings are based on the assumption that the maximum mileage per week does not exceed 500, but see "After Sales Service" for special attention during the first 1,000 miles.

Under more arduous conditions, such as very dusty or very muddy roads, long distances at high speeds or with heavy loads, it will be advisable to attend to chassis lubrication more frequently.

DAILY

Engine: Check the level of oil in the sump and top up if necessary to the full mark on the dipstick. The oil filler is in the valve rocker cover and the dipstick is on the right side of the engine.

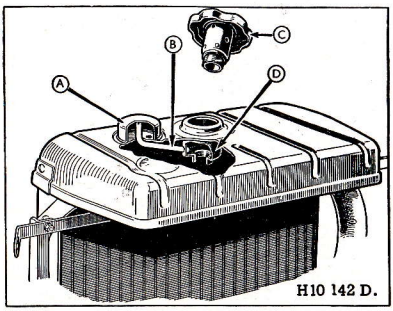
Radiator: Check the level of water in the radiator and top up if necessary. Fill to just below the top of the filler plug thread, when the engine is cold.

Fuel Tank: Check the quantity of fuel in the tank and add upper cylinder lubricant if desired.

EVERY 500 MILES OR WEEKLY

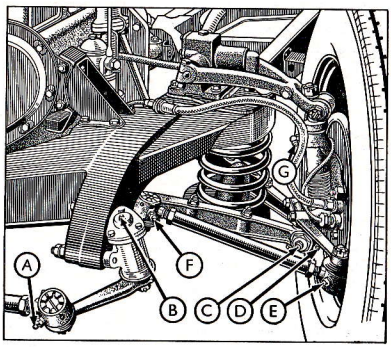
Shackle Pins: These are on the rear ends of the rear road springs and should be given a charge of oil once a week. There are two nipples, one on each top shackle.

Front Suspension: Apply the oil gun to the lower arm joints where they meet the swivel axle housing (C).



THE RADIATOR HEADER TANK

A—Expansion chamber. B—Overflow pipe. C—Filler cap. D—Filler cap well.



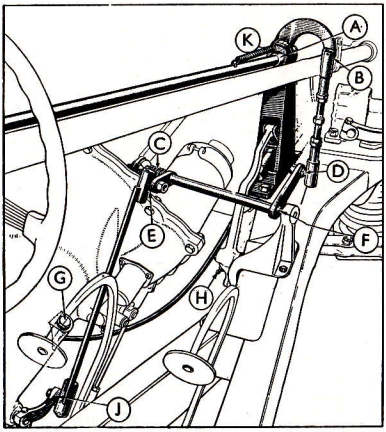
OILING POINTS ON FRONT SUSPENSION

A—Steering cross tube. B—Steering idler. C—Suspension lower joint. D—Swivel pin lower bush. E—Steering side tube. F—Steering side tube. G—Swivel pin upper bush.

Swivel Axles: Apply the oil gun to the two nipples on each swivel axle. This is best done when the vehicle is partly jacked up, since the oil is then able to penetrate to the thrust side of the bearings (G and D).

In the case of Commercial Vehicles, which are supplied with a screw type lifting jack, the load on the front suspension should be relieved by placing the jack under the lowest point of the frame front cross member, with the lipped end of the lifting platform firmly against the forward side, and then partly raising the vehicle.

Steering Connections: Apply the oil gun to the steering cross tube nipples (2) (A) and the steering side tube nipples (4) (E and F) and top up the steering idler (B) via the oil plug orifice.



H70. 158. A.

THE GEAR CHANGE

A, B, C, D, E, F and J are oiling points, G is the gearbox filler plug, and H the handbrake lever pivot nipple.

N.B.—On no account should the steering idler be overlooked, as lack of lubricant in this component may cause a serious breakdown due to the additional load imposed on the steering box.

Wheels and Tyres: Tighten the wheel nuts and check the tyre pressures, including the spare, using a tyre gauge and inflate if necessary. See that all valves are fitted with valve caps. Inspect the tyres for injury and remove any flints or nails from the treads. Ensure that there is no oil or grease on the tyre, since these substances are harmful to rubber. See section on "Tyres" for correct pressures.

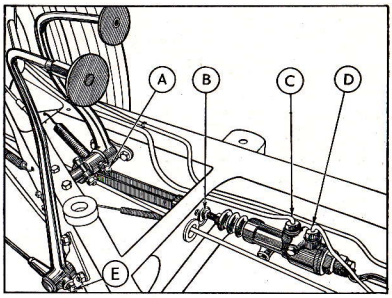
Brakes and Controls: With the oil can, oil all the handbrake linkage points, brake and clutch pedal linkages and carburetter control joints. Also oil all the gear change control joints.

500 MILES

Engine: On new and reconditioned engines the sump should be drained and refilled with new oil after the first 500 miles. At the same time as these changes are made, the cylinder head nuts should be tested and tightened if found necessary.

Gearbox and Rear Axle: After 500 miles on new vehicles, drain and refill the gearbox and rear axle.

Always drain the oil after a run, since it will then flow more easily.



H70. 113. C.

THE PEDALS

A—Brake pedal nipple. B—Adjusting nut. C—Master cylinder inlet union. D—Master cylinder outlet union. E—Clutch pedal nipple.

EVERY 2,000 MILES OR MONTHLY

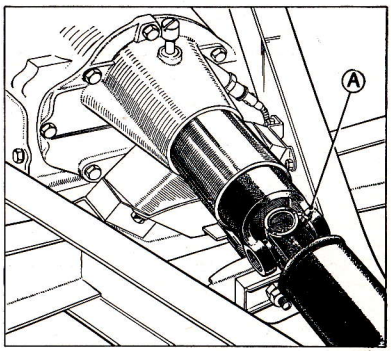
Engine: Drain the sump and refill with new oil. Capacity is 7 pints (4 litres).

Gearbox: Check the level and top up if necessary. For access lift the floor carpet and remove the rubber plug on the right side of the gearbox covering. The filler plug is then accessible.

Remove the plug and fill up to the bottom of the threads. This gives the correct level.

Clutch Pedal: With the oil gun, lubricate the nipple at the base of the lever.

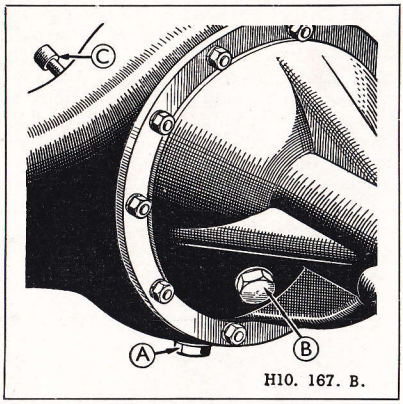
Brakes: Examine the brakes and adjust if necessary. Apply the oil gun to the brake balance lever on the rear axle, the



H40. 207. A.

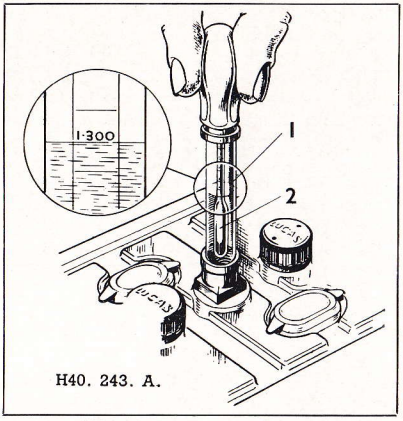
THE PROPELLER SHAFT

A is the universal joint nipple.



THE REAR AXLE

A is the drain plug, B the filler plug, and C the breather.



USING A HYDROMETER

Ascertain the battery state of charge by taking hydrometer readings.

handbrake pivot, and the brake pedal pivot nipple.

Rear Axle: Check the level and replenish if necessary. The correct oil should be used and injected into the axle casing from underneath, using the adapter on the oil gun.

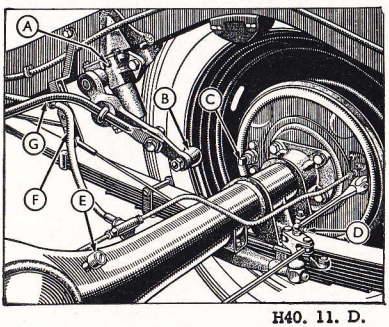
First remove the plug, which is on the right lower front side of the axle, then place the end of the adapter into the oil hole, and inject the oil.

The plug also serves as an oil level indicator. Therefore, do not replace the plug at once, but give time for the superfluous oil to run out if too much has been injected. This is most important, because, if the rear axle is overfilled the lubricant may leak through to the brakes and render them ineffective. Wipe away the excess oil from the casing.

Shock Absorbers: Ensure that there are no visible signs of leakage and that the rubber bushes are undamaged.

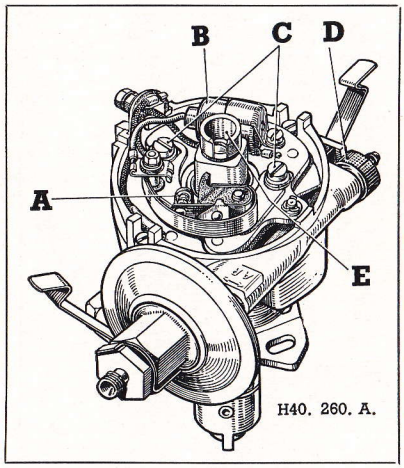
Steering Column: Lubricate the felt washer at the top of the steering column by adding a few drops of light machine oil through the oil hole in the steering wheel hub close to the steering column.

Battery: Ascertain the state of charge of the 12-volt battery by taking hydro-



REAR SUSPENSION

A—Shock absorber filler plug. B—Rubber ball joint. C—Brake adjuster. D—Brake balance lever. E—Rear axle breather. F—Brake linkage. G—Anti-roll torsion bar.



THE DISTRIBUTOR

A—Contact points. B—Condenser. C—Contact adjusting screws. D—Micrometer adjuster. E—Cam and drive-shaft oiling point.

meter readings. The specific gravity readings should be:—

Fully charged ..	1.280–1.300
Half charged ..	approx. 1.210
Discharged	below 1.150

These figures are for an assumed electrolyte temperature of 60 degs. F.

Check that the electrolyte in the cells is just level with the tops of the separators. If necessary add a few drops of distilled water. Never use tap water as it contains impurities detrimental to the battery.

Never leave the battery in a discharged condition. If the vehicle is to be out of use for any length of time, have the battery removed and charged about once a fortnight.

Brake Supply Tank: Inspect and refill to the correct level, which is one inch from the top of the container. Use only the recommended fluid. See centre pages.

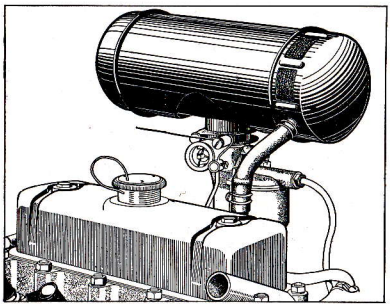
EVERY 3,000 MILES

Sparking Plugs: Remove the plugs and clean off all carbon deposit from the electrodes, insulators, and plug threads with a stiff brush dipped in paraffin. Alternatively the plugs may be taken to the local Austin dealer for cleaning in a special machine.

Clean and dress the plug points and reset to the correct gap of .018 in.

Before replacing the plugs check that the copper washers are in a sound condition. Never overtighten a plug but ensure that a good joint is made between the plug body, the copper washer, and the cylinder head.

Use only Champion N.8.B Long Reach plugs.



H40. 22. B.

THE AIR CLEANER

Note the connection for fume extraction from the valve cover.

Distributor Cam- and Drive-Shaft Bearings: Lubricate the distributor cam-shaft bearings by withdrawing the moulded rotating arm from the top of the distributor spindle and carefully adding a few drops of oil round the screw exposed to view. See pages 27 and 30 for recommended oils. Take care to refit the arm correctly by pushing it on to the shaft and turning until the key is properly located.

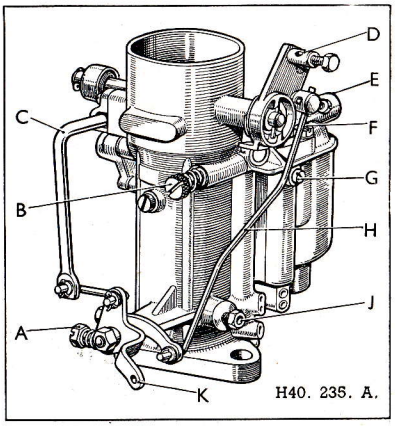
Distributor Cam: Apply a trace of engine oil to the distributor cam. Be careful not to let any oil or dirt reach the contact breaker points.

Distributor Automatic Advance: Remove the distributor cap and add a few drops of engine oil through the hole in the contact breaker base through which the cam passes.

EVERY 5,000 MILES

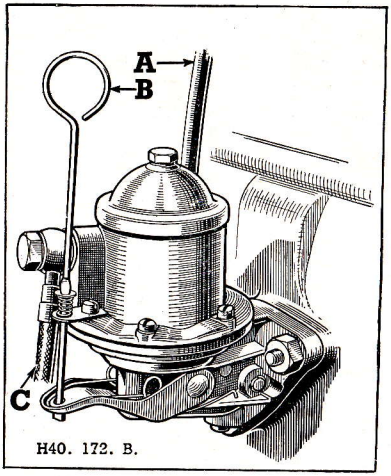
Air Cleaner: As well as acting as an air intake silencer and cleaner, by a coupling to the rocker cover, it also acts as a fume extractor.

Every 5,000 miles the air cleaner should be removed, cleaned and "wetted" with fresh oil. To do this slacken the clamping bolt, and slacken the hose clip between the cleaner and the rocker cover, lift the air cleaner off the carburetter and then



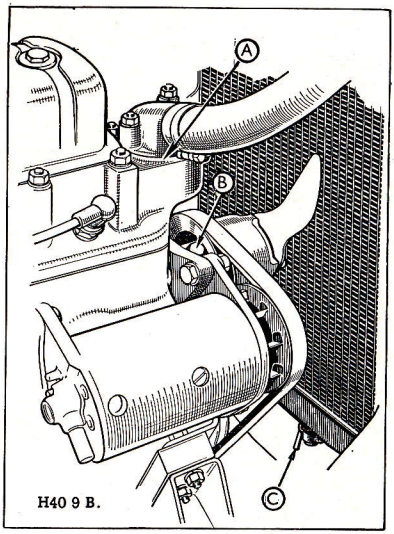
THE ZENITH CARBURETTER

A—Throttle stop adjusting screw. B—Air mixture screw. C—Accelerating pump operating rod. D—Choke control spindle arm. E—Fuel inlet. F—Float chamber securing screw. G—Accelerating pump stop screw. H—Choke inter-connection to throttle. J—Vacuum timing control connection. K—Throttle control spindle arm.



THE AC PETROL PUMP

A is the delivery pipe, B the priming lever, and C the supply pipe.



THE COOLING SYSTEM

A—Thermostat. B—Water Pump Oiling plug. C—Drain cock.

thoroughly rinse the louvred end in a shallow dish of petrol.

After drying, the metal gauze mesh should be re-oiled with clean engine oil, allowing the surplus oil to drain off before refitting the cleaner to the carburetter.

Refit the cleaner with the gauze facing forward, and re-tighten the clamp.

There is an oil-bath type of filter fitted to certain export models. The wire mesh should be cleaned out, and the oil changed. Wash the mesh in petrol, but do not replace until thoroughly dry. The oil level is indicated by an arrow pointing to a small shoulder in the metal container.

Fuel System: Check the flow of fuel at the carburetter inlet union.

First remove the carburetter inlet union and operate the pump hand priming lever. Each pumping stroke should force a strong jet of petrol from the union.

If the flow of fuel from the pump is restricted, remove the pump top cover and lift out the filter over the pump top chambers. Remove the drain plug and clean out all sediment from the pump chamber. Clean the pump filter and carefully replace. When refitting the pump top cover ensure that the cork washer is in good condition. A poor washer will not permit an air-tight joint and the operation of the pump will be impaired.

Remove the bowl of the carburetter for cleaning, by taking out the two hexagon-headed retaining bolts. On turning the bowl over the float will drop out and reveal the main and compensating jets at the bottom of the bowl.

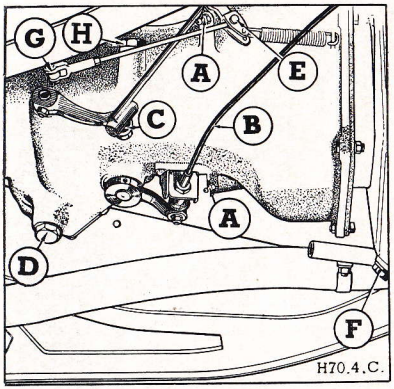
The jets may be unscrewed by using the squared end of one of the carburetter bowl retaining bolts.

The slow running jet is situated centrally in the carburetter bowl rim adjoining the emulsion block, and is slotted to permit easy removal with a screwdriver.

Clean the jets by blowing through them with a tyre pump or with the mouth, in the reverse direction to the petrol flow. Never use wire or attempt to reamer when clearing a jet. Before replacing the jets ensure that the fibre washers under them are in position. Replace the float the correct way up as marked.

Speedometer Drive: Disconnect the cable from the speedometer end and pull the inner member out of the casing. This should be lubricated sparingly by smearing it with light grease. It is important that the drive is NOT over-lubricated, otherwise damage will be caused to the speedometer head should the lubricant find its way into the head.

To re-assemble, thread the cable with a twisting movement into the casing, since this will help the cable to engage easily with its union at the gearbox end. When



THE GEARBOX

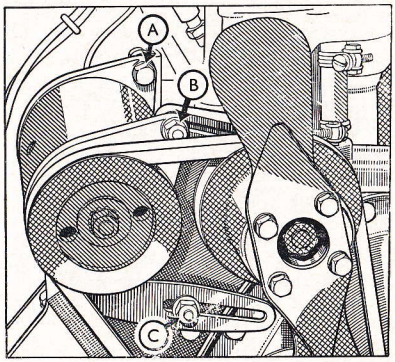
A—The clutch operating shaft. B—The speed selector cable. C and G—are oiling points. D—The drain plug. F—Engine drain plug. H—Gearbox filler plug.

this engagement is felt the cable can be pushed home so that the square end stands out approximately ⅜ inch from the casing.

Cooling System: Flush out the cooling system in accordance with the instructions given on page 26. Normally this operation is carried out twice annually upon the addition and removal of anti-freeze. In countries where anti-freeze is not required, however, the cooling system should be flushed out every 5,000 miles.

Propeller Shaft Universal Joints: Lubricate the universal joints. Move the vehicle to expose the two nipples.

Also test the flange bolts and tighten if these have worked loose: the nuts are secured with tab washers.



H40. 13. B.

FAN BELT ADJUSTING

A and B are the hinges and C the adjusting link.

Rear Axle: Drain when the oil is warm, after a run, and refill to the level of the filler plug with new oil. Capacity, 2¼ pints (1.28 litres).

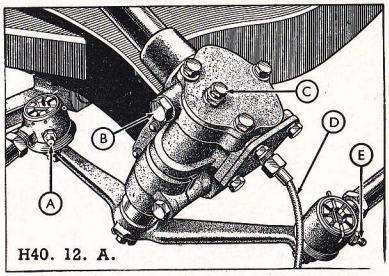
Gearbox: Drain when the oil is warm, after a run, and refill to the level of the filler plug with new oil. Capacity, 3 pints (2 litres).

Front Road Wheel Hubs: Unscrew the hub cap, and recharge with grease. It is important that the hubs are not over-greased, due to the fact that any surplus may find its way on to the brake linings, and thus reduce their efficiency.

Rear Road Wheel Hubs: These are packed with grease upon assembly and do not require greasing attention.

Fan Belt: The fan belt must be sufficiently tight to prevent slip, yet it should be possible to move it laterally about half an inch each way.

To make any necessary adjustment, slacken the bolts and raise or lower the dynamo until the desired tension of the belt is obtained. Then securely lock the dynamo in position again.



THE STEERING BOX

A—Steering side tube. B—Filler plug. C—Adjusting screw. D—Horn cable. E—Steering cross tube.

Steering Box: The steering box should be topped up with oil, using the special adapter on the oil gun. Take out the hexagon plug on the side of the steering box to inject the oil. Make certain that grit does not enter the casing during the operation, and wipe away any excess oil afterwards.

General Check: Examine and, if necessary, tighten all bolts and nuts such as road spring clips, and body mounting bolts.

Examine other parts, such as steering connections, brake rods, and tubing, etc., neglect of any may be followed by an expensive repair and inability to use the vehicle for a lengthy period.

EVERY 10,000 MILES

Clutch Operating Shaft: Lubricate the two nipples sparingly, as any excess may find its way into the clutch.

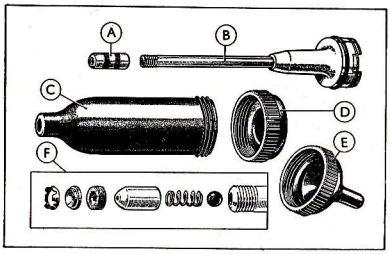
Sparking Plugs: Renew the sparking plugs. Use only Champion N.8.B Long Reach plugs.

Dynamo Bearings: Unscrew the wick-type lubricator with slotted end and if the wick is dry refill the cup with high melting point grease.

Water Pump: There is a plug on the water pump housing which should be removed and a small charge of oil inserted. It is better to under-lubricate than to overdo the attention.

THE OIL GUN

THE gun, as supplied, is used for forcing lubricant through the nipples. Charge the gun by unscrewing the end cap and fill to its capacity.



H70. 108. A.

THE OIL GUN

A—Oil gun nozzle. B—Piston and telescopic ram. C—Outer case. D—End cap. E—Adaptor. F—Components of the nozzle.

Oiling Technique: Always make sure that the nipple on the chassis component about to be lubricated is clean before applying the gun. Push the gun body hard and repeat the strokes according to the amount of lubricant required in the component. Wherever possible, watch for old oil exuding from the component concerned, since this is proof that the new oil is being forced in. A nipple which refuses to pass oil should be removed and cleaned. This is best achieved by leaving the nipple to soak for a short time in paraffin.

Should difficulty be experienced in the operation of the gun it is probably due to air locks. This can be easily overcome by carrying out the following procedure:— Extend the steel cylinder as far as possible, fill the gun with the correct oil and replace the cap, hold the gun firmly in the left hand, unscrew the cap approximately two turns and then gently force the steel cylinder into the gun. This will force the oil to the top of the barrel and displace any air that may have been included in the filling process; the air can be heard distinctly coming out of the threads of the cap and when oil begins to emerge the cap should then be tightened. After lubricating a point, it is most essential that the disconnecting process should be made with a sideways breaking movement and not pulled directly away; any attempt to disconnect it by pulling directly away will have a tendency to break the spring clip in the nozzle of the gun and at the same time to extend the cylinder, thereby sucking in air.

To enable the steering box and rear axle to be topped up as and when necessary, there is a special adaptor provided. The procedure is as follows: Remove the end cap and extend the steel cylinder as far as possible, fill the gun with the recommended oil and then screw on the adaptor in place of the end cap.

Remove the steering box or rear axle filler plug, insert the adaptor end into the filler orifice and force the steel cylinder into the gun body. This will quickly empty the gun's contents into the component concerned.

Replace the filler plug after ascertaining that the component has been topped up to its correct level.

SERVICE ATTENTIONS

THE following additional inspections and adjustments should be carried out periodically by your Austin dealer at the mileages mentioned.

EVERY 5,000 MILES

Front Shock Absorbers: Check the fluid levels and top up, if necessary. The correct level is just below the filler plug threads. See page 30 for recommended fluid. Carefully clear away all road dirt and grit from the vicinity of the filler plug before removal.

It should be noted however, that in the case of the '*A40*' *Sports* it is necessary to remove the shock absorbers from the chassis before inspecting the fluid levels or topping up.

Mount the shock absorber on to a steel plate held in a vice and whilst working the lever arm both ways through its full stroke top up with Girling Piston Type Thin Fluid until overflowing.

Rear Shock Absorbers: Check the fluid levels and top up, if necessary. The correct level is at the bottom of the filler opening.

N.B.—Where the recommended fluid is not available, the following brands are acceptable alternatives:—Shell Donax A2, Wakefield's Castrolite, Mobiloil Arctic, Esso Hydraulic (Medium), Duckham's N.P.20, Price's Energol S.A.E. 20.

Decarbonising, Valve Grinding and Tappet Adjustment: This attention may not be needed so frequently on vehicles used for long journeys. As a general guide, a falling off in engine power with pinking indicates when decarbonising is due. The correct tappet clearance is .015 in. with the engine hot or cold.

EVERY 6,000 MILES

External Oil Filter: Take off the old filter, and replace with a new unit. Use only "A.C. Sphinx," Type AR1C or Purolator Micronic Type MF2001.

EVERY 10,000 MILES

1. **Contact Breaker Points:** Clean the contact breaker points. Cleaning of the contacts is made easier if the contact breaker lever carrying the moving contact is removed. To do this, slacken the nuts on the terminal post and lift off the spring, which is slotted to facilitate removal. Before replacing smear the pivot on which the contact breaker works with clean engine oil.

Check the contact breaker setting, re-set if necessary. The correct gap is .014–.016 ins.

2. **Starter Commutators:** Clean, also check freedom of brushes in holders.
3. **Track Adjustment:** Check front wheel alignment: $\frac{1}{16}$ to $\frac{1}{8}$ in. toe-in.
4. **Steering Box:** Check for wear.
5. **Clutch Pedal Clearance:** Check and adjust if necessary. Pedal movement should be $\frac{3}{4}$ in. before clutch springs are felt under compression.
6. **Oil Sump:** Remove and clean sump and oil pump strainer gauze.
7. **Front and Rear Hub Bearings:** Check for signs of wear.
8. **Ignition Timing:** Check setting and adjust if necessary.

GENERAL MAINTENANCE

THE following information covers those attentions essential to the satisfactory operation of the vehicle, which are not already mentioned either in "Regular Attentions," or in the list of "Service Attentions" normally entrusted to the local Austin dealer or service station.

ENGINE LUBRICATION

CORRECT lubrication is of the utmost importance for the engine, which has to operate at sustained high temperatures and speeds, and it is essential that only oils of the highest quality and correct grade are used. Inferior or unsuitable oils will cause excessive wear in an unduly short time.

Additives which dilute the oil or otherwise impair its efficiency must *not* be used, neither should graphite compounds be mixed with the oil as they may interfere with the efficient working of the system which employs very fine jets for the lubrication of certain parts of the engine; also premature choking of the oil filter may result.

Choice of Lubricants: The colour or appearance of an oil at atmospheric temperatures gives no indication as to its efficiency under operating conditions and owners are advised to use only officially recommended lubricants.

The letters S.A.E. followed by a number constitute a classification of the lubricant in terms of viscosity or fluidity.

For instance, a low S.A.E. number indicates that the oil is of low viscosity, which means that it flows more readily than oil with a high viscosity rating.

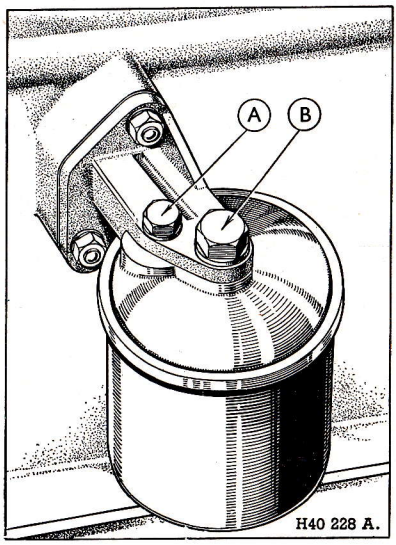
It will be appreciated, therefore, that oil with a low S.A.E. number is essential if easy starting is to be obtained in cold weather, whereas in hot weather a higher viscosity oil is desirable in order to keep oil consumption within normal limits.

Upper Cylinder Lubrication: The use of an upper cylinder lubricant is beneficial to the running of the engine and may be added to the fuel when the tank is replenished. Carefully follow the manufacturer's instructions.

Impurities: Even the best oils in the engine become contaminated during use with unburnt fuel, carbon, metallic particles, and moisture, and it is therefore most important that the oil is changed at the recommended mileage.

Drain the crankcase when the oil is warm and thoroughly fluid, since it will then carry away as much of the contamination as possible. Afterwards, if necessary, the crankcase may be flushed with a thin oil, but never in any circumstances use paraffin.

Oil Level: The oil should never be allowed to fall more than $\frac{1}{2}$ inch from the full mark on the dipstick. It is advisable to wipe the dipstick before taking the reading, which must only be taken when the engine is stationary and the vehicle on level ground if a true result is to be obtained.



THE OIL FILTER

A—Oil inlet union. B—Oil outlet union.

Oil Pressure: The oil pressure gauge indicates whether the oiling system is working properly. It should be looked at occasionally while the engine is running at normal speed.

The normal oil pressure during ordinary running should be 40–45 lbs. per sq. in. with a proportionately lower pressure when idling.

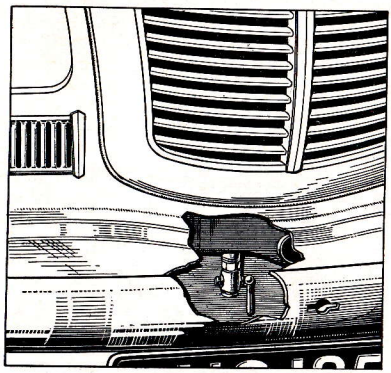
Never run the engine if the oil gauge fails to register any pressure. Serious damage to the engine will result.

External Oil Filter: Renew the filter complete every 6,000 miles. Use only "A.C. Sphinx," Type AR1C or Purolator Micronic Type MF2001. Scratch the mileage of the vehicle on to the casing of the new filter as a guide for renewal.

COOLING SYSTEM

THE cooling of the engine is maintained by an efficient radiator, incorporating an expansion chamber, which prevents the loss of cooling water through splash or expansion; and circulation is by a water pump, with thermostat control.

Topping-up is only necessary very occasionally. The correct level is just below the top of the filler cap threads when the engine is cold.



H40. 229. A.

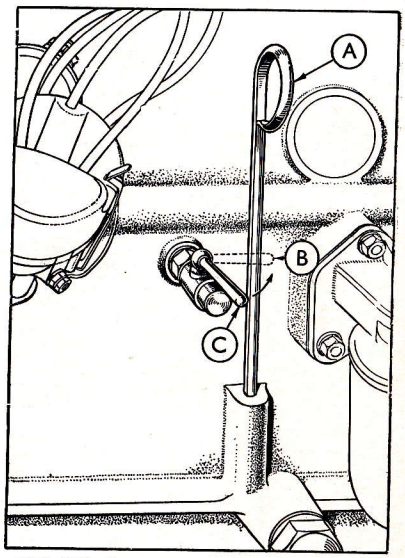
THE RADIATOR DRAIN COCK

Use a stiff piece of wire if the cock is blocked.

Draining the System: There are two drain cocks; one positioned at the bottom of the radiator, and the other on the right side of the cylinder block. Open both cocks and ascertain that the vehicle is standing on level ground while draining.

When draining in freezing weather, do so when the engine is hot. Run the engine slowly for one minute when the water has ceased flowing to clear any water left in the pump and other places where it might collect. Finally, leave a reminder on the vehicle to the effect that the cooling system has been drained.

Flushing the Radiator: To ensure efficient circulation of the coolant and to reduce the formation of scale and sediment in the radiator, the system



H40. 230. A.

CYLINDER BLOCK DRAIN TAP

A—Dipstick. B—Cylinder block drain tap in open position. C—Cylinder block drain tap in closed position.

RECOMMENDED LUBRICANTS—OVERSEAS

		'Duckham's'	'Vacuum'	'Shell'	'Wakefield'	'Essolube'	'Energol'
Engine *	From 90°F. (32°C.) down to 32°F. (0°C.)	Duckham's NOL 'Thirty'	Mobiloil A.	Shell X.100 S.A.E. 30	Castrol XL	Essolube 30	Energol Motor Oil S.A.E. 30
	32°F. (0°C.) down to +10°F. (−12°C.)	Duckham's NOL 'Twenty'	Mobiloil Arctic	Shell X.100 S.A.E. 20	Castrolite	Essolube 20	Energol Motor Oil S.A.E. 20W
	Below +10°F. (−12°C.)	Duckham's NOL 'Ten'	Mobiloil Arctic Special	Shell X.100 S.A.E. 10	Castrol Z	Essolube 10	Energol Motor Oil S.A.E. 10W
Transmission †	Summer	Duckham's C.G. 90	Mobilube C.W.	Shell Dentax 90	Castrol S.T.	Esso Gear Oil S.A.E. 90	Energol Transmission Oil S.A.E. 90
	Winter	Duckham's C.G. 90	Mobilube C.W.	Shell Dentax 90	Castrol S.T.	Esso Gear Oil S.A.E. 90	Energol Transmission Oil S.A.E. 90
Rear Axle ‡‡	Summer	Duckham's NOL E.P.T. 140	Mobilube G.X. 140	Shell Spirax 140 E.P.	Castrol Hi-Press	Esso Expee Compound 140	Energol Transmission Oil E.P. S.A.E. 140
	Winter	Duckham's NOL E.P.T. 90	Mobilube G.X. 90	Shell Spirax 90 E.P.	Castrol Hypoy	Esso Expee Compound 90	Energol Transmission Oil E.P. S.A.E. 90
‡Steering Box and Oil Gun . .		Duckham's NOL E.P.T. 140	Mobilube G.X. 140	Shell Spirax 140 E.P.	Castrol Hi-Press	Esso Expee Compound 140	Energol Transmission Oil E.P. S.A.E. 140
Front Wheel Hubs		Duckham's H.B.B. Grease	Mobilgrease No. 5	Shell Retinax A	Castrolease Heavy	Esso Bearing Grease	Energrease C3
Distributor and Oil Can . .		Duckham's NOL 'Twenty'	Mobil Handy Oil	Shell X.100 S.A.E. 20	Wakefield Oilit	Esso Handy Oil	Energol Motor Oil S.A.E. 20W
Upper Cylinder Lubrication . .		Duckham's Adcoids	Mobil Upperlube	Shell Donax U	Wakefield Castrollo	Esso Upper Motor Lubricant	Energol U.C.L.
Rusted Parts or Squeaks		Duckhams' Laminoid Liquid	Mobil Spring Oil	Shell Donax P	Castrol Penetrating Oil	Esso Penetrating Oil	Energol Penetrating Oil

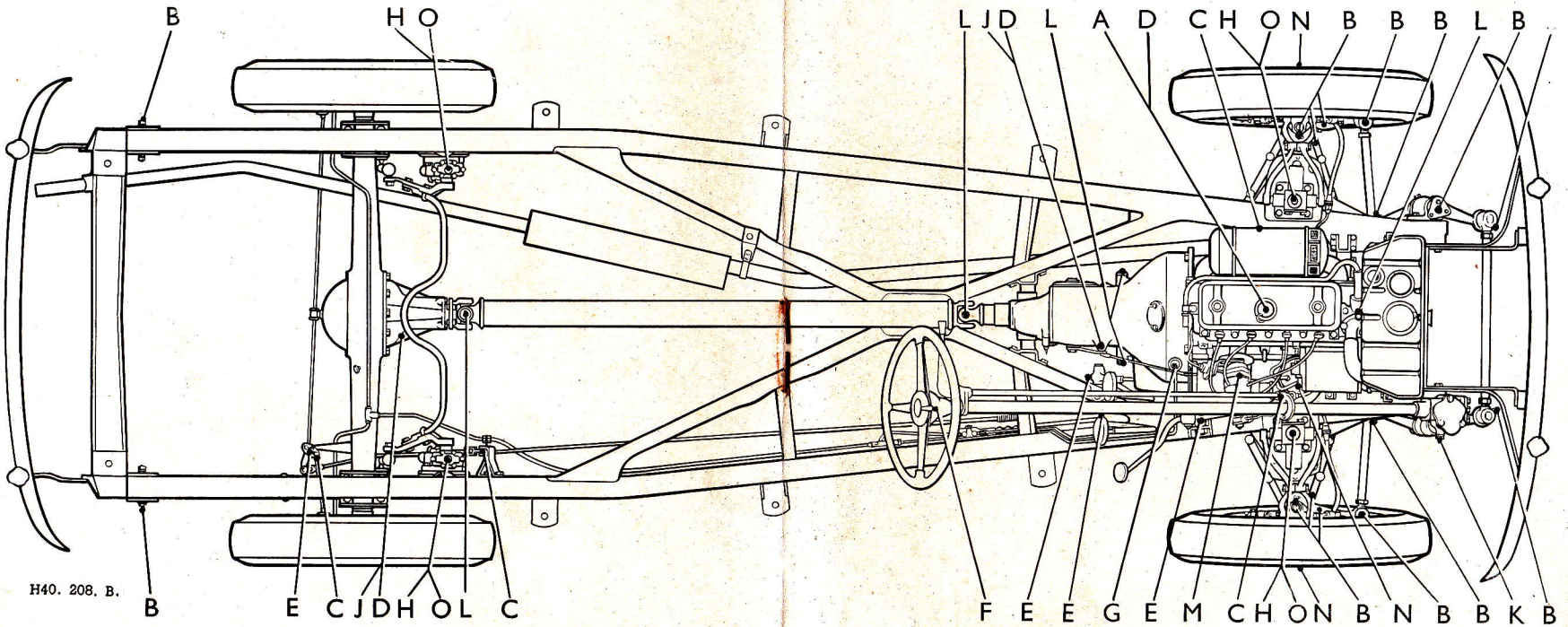
*Engine:—Above 90°F. (32°C.) or for high-speed driving at high temperatures use next heavier grade of oil.

†Transmission:—For prevailing sub-zero (°F) (−18°C.) temperatures use S.A.E. 80 Lubricant (or Transmission 200).

‡Rear Axle and Steering:—For prevailing sub-zero (°F.) (−18°C.) temperatures use S.A.E. 80 E.P. Lubricant.

Use only the best Standard Fluids for Hydraulic Brakes and Shock Absorbers.

THE AUSTIN A40—LUBRICATION CHART



DO NOT SPRAY THE INDEPENDENT FRONT SUSPENSION WITH EITHER OIL OR PARAFFIN

WEEKLY (500 MILES)			MONTHLY (2,000 MILES)			OCCASIONALLY		
OIL	A	Top-up the Engine Crankcase.	OIL	D	Drain and refill Engine Crankcase. Top-up the Gearbox and Rear Axle.	OIL	J	Drain and refill the Gearbox and Rear Axle (5,000 miles).
OIL GUN	B	Steering Connections (6). Steering Idler (1). Swivel Axles (4). Front Suspension Lower Joint (2). Rear Spring Shackles (2).	OIL GUN	E	Brake Balance Lever (1). Handbrake Pivot (1). Clutch Pedal (1). Brake Pedal (1).	OIL	K	Top-up the Steering Box (5,000 miles).
			OIL CAN	F	Steering Column top Bush,	OIL GUN	L	Universal Joints (2) (5,000 miles). Clutch Operating Shaft (2) (10,000 miles). Water Pump (10,000 miles).
OIL CAN	C	Handbrake, Pedal, and Carburetter Control Joints. Brake Linkage, Balance Lever, and Gear Change Control Joints.	EXAMINE	G	Brake Fluid Supply Tank level.	OIL CAN	M	Distributor (3,000 miles).
			EXAMINE	H	Front and Rear Shock Absorbers.	GREASE	N	Front Hubs (5,000 miles). Dynamo (10,000 miles) with H.M.P. grease.
						EXAMINE	O	Front and Rear Shock Absorber Fluid levels (5,000 miles).

Figures in brackets denote the number of nipples requiring attention.

RECOMMENDED LUBRICANTS—HOME

		'Duckham's'	'Vacuum'	'Shell'	'Wakefield'	'Essolube'	'Price's'
Engine	Winter	Duckham's NOL 'Twenty'	Mobiloil Arctic	Shell X.100 S.A.E. 20	Castrolite	Essolube 20	Energol S.A.E. 20
	Summer . .	Duckham's NOL 'Thirty'	Mobiloil A	Shell X.100 S.A.E. 30	Castrol XL	Essolube 30	Energol S.A.E. 30
Gear Box		Duckham's NOL 'Forty'	Mobiloil B.B.	Shell X.100 S.A.E. 40	Castrol XXL	Essolube 40	Energol S.A.E. 40
Rear Axle, Steering Box and Oil Gun		Duckham's NOL E.P.T. 140	Mobilube G.X. 140	Shell Spirax 140 E.P.	Castrol Hi-Press	Esso Expee Compound 140	Energol E.P. S.A.E. 140
Front Wheel Hubs		Duckham's H.B.B. Grease	Mobilgrease No. 4	Shell Retinax A	Castrolease Heavy	Esso Grease	Belmoline C
Distributor and Oil Can		Duckham's NOL 'Twenty'	Mobil Handy Oil	Shell X.100 S.A.E. 20	Wakefield Oilit	Esso Handy Oil	Energol S.A.E. 20
Upper Cylinder Lubrication . .		Duckham's Adcoids	Mobil Upperlube	Shell Donax U	Wakefield Castrollo	Essomix	Energol U.C.L.
Rusted Parts or Squeaks		Duckham's Laminoid Liquid	Mobil Spring Oil	Shell Donax P	Castrol Penetrating Oil	Esso Penetrating Oil	Energol Penetrating Oil

Hydraulic Brakes:—Use Girling Brake Fluid only.

Shock Absorbers:—Use Armstrong's Super (Thin) Shock Absorber Oil.

should be periodically flushed with clean running water, preferably before putting in anti-freeze in the Autumn and again when taking it out in the Spring.

The water should be allowed to run through until it comes out clean from the drain cocks.

A stiff piece of wire should be inserted into the cocks during flushing to ensure that they are not becoming clogged with sediment.

Frost Precautions: During freezing weather an anti-freeze compound should be added to the coolant in the radiator.

Always flush the cooling system before adding an anti-freeze solution, and again when removing it in the Spring.

The manufacturers of anti-freeze will provide a table indicating the quantity to be used in providing full protection against any degree of frost.

The strength of the solution must be maintained by topping up with anti-freeze solution as necessary. Excessive topping up with water will reduce the degree of frost protection.

The following are officially approved anti-freeze compounds: Smith's 'Bluecol'; County Chemical Co. 'Chemico Anti-Freeze'; and Johnson's 'Velvol Anti-Freeze'.

N.B.—If a heater is fitted, under no circumstances resort to draining the cooling system as an alternative to the use of anti-freeze, due to the fact that it is not possible to drain the heater unit completely by means of the cylinder block and radiator drain cocks.

HEATING AND DEMISTING

THE Smith built-in heating and demisting unit, as fitted to the Saloon and Coupé, utilises the water in the engine cooling system to heat air for circulation in the car interior and over the windscreen for demisting and defrosting. The engine thermostat maintains a temperature of 70° to 75°C. (158° to 167°F.) in the cylinder block, and since the thermostat enables the engine to warm up very rapidly heat is available for the car interior soon after starting.

Description: An electrically driven booster fan, bolted to the left-hand side of the radiator mounting, draws air through the front grille and forces it along a large diameter flexible pipe into the heater unit situated centrally on the bulkhead. Here it passes through a water heated radiator into a distribution chamber where shutters, operated from the heater control panel, regulate its flow into the vehicle interior.

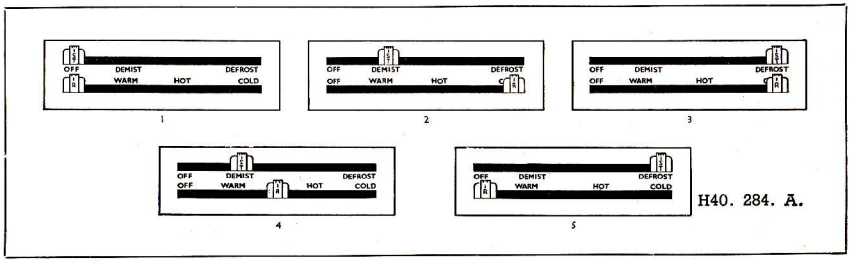
Even without the fan switched on air will be forced into the vehicle and on to the windscreen by ram effect due to the vehicle's motion, provided the appropriate shutter in the Heating and Demisting Unit is opened; but at low vehicle speeds, particularly if maximum heating or ventilation is required, the fan should be switched on. If necessary, the air supply to the vehicle interior can be entirely shut off, as, for instance, when in dense traffic, to prevent the entry of exhaust fumes, dust, etc.

Controls: The heating and demisting unit is controlled by two levers operating in a quadrant mounted beneath the instrument panel. The upper lever regulates the flow of air to the windscreen for demisting or defrosting whilst the lower lever regulates the flow of air to the vehicle interior for heating or ventilating. The booster fan is controlled by a pull-out type switch situated on the right-hand side of the heater control panel.

A pull-out type control knob is situated on the left-hand side of the control panel, but this is not connected to the heating and demisting unit. When operated it opens a shutter which allows extra fresh air into the vehicle interior, the volume admitted being dependent in the vehicle's forward speed and the amount the shutter is open.

The following table summarises the various control positions available for dealing with all types of weather conditions.

Conditions	Heating/Ventilating Control Lever Position	Demisting/Defrosting Control Lever Position
1. No air supply to vehicle interior	"Off"	"Off"
2. Warm weather—cold ventilating air, cold air to windscreen	"Cold"	"Demist"
3. Warm weather—cold ventilating air, maximum air to windscreen	"Cold"	"Defrost"
4. Cold weather—hot ventilating air, warm air to windscreen	Between "Warm" and "Hot" according to heat required	"Demist"
5. Freezing weather—maximum hot air to windscreen ...	"Off"	"Defrost"



THE HEATER CONTROL POSITIONS

Heater Unit (Commercial Vehicles and Sports Model): The Smith Heater as fitted to the Commercial Vehicles and Sports Model is of the re-circulation type, i.e., its function is to heat and re-circulate the air within the vehicle, and therefore differs considerably from the type fitted to the Saloon.

The heater consists of a small water radiator, through which air is drawn, heated and re-circulated by means of a fan driven by a small electric motor; this being operated by a rheostat switch on the control panel.

The heater is situated behind and below the instrument panel, and warm air is directed towards the feet. At the same time a constant stream of warm air is passed across the windscreen via a duct and nozzle built into the screen rail, which ensures clear vision in conditions when misting of the screen is liable.

The heater radiator is supplied with hot water from the engine cooling system by means of a supply and return pipe, and the water flow can be turned on or off at will, by operating the cock situated on the right-hand side of the cylinder block at the point where the water supply pipe is connected.

This means that in winter warm air can be circulated by use of the cooling water, and in summer with the water supply turned off, cool air can be circulated by the same means.

BRAKES

THE Girling hydraulic braking system employs two-leading shoe brakes at the front, with a dual purpose expander unit on the rear brake shoes, enabling them to be operated hydraulically or mechanically. A pistol grip handbrake mounted under the fascia operates the mechanical linkage to the rear brakes, while the pedal operates hydraulically on all four wheels.

Adjustment: The adjustment for taking up wear in the brake shoe linings is effected at each brake back plate; the brake rods and linkage system should in no circumstances be altered. No attempt should be made to adjust the brakes with the handbrake on.

Front Brakes: Firmly chock one of the wheels and then jack the vehicle until the front wheel to be adjusted is clear of the ground. Fully release both the hexagon-headed adjuster bolts on the brake backing plate by turning them in an anti-clockwise direction. Then turn one of the adjuster bolts in a clockwise direction until the brake shoe concerned rubs against the drum. Release the adjuster one notch, or until the brake shoe is just free of the drum and then repeat the procedure for the second adjuster as on the front brake assembly a separate adjuster is provided for each shoe. Repeat the adjustment for the other front wheel.

The adjusters operate snail type cams which bear against the shoes. These cams are notched in order to hold them in position and thus require no locking device.

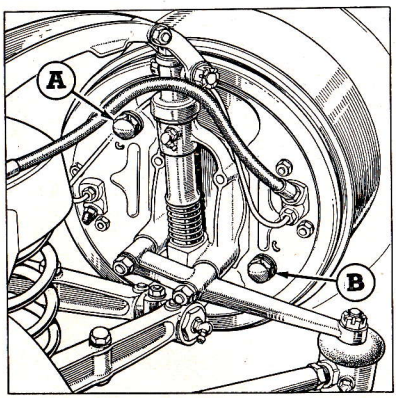
Rear Brakes: Adjustment is made by turning the square-ended adjuster on each rear brake backing plate in a clockwise direction as far as it will go. The brake shoes are then hard on, and the adjuster should be turned back two full notches to give the shoes the correct clearance from the drum.

The adjuster can be turned a notch at a time, and the engagement, which can be heard and felt, is caused by the flat sides of the cone on the inner end of the adjuster engaging with the plungers supporting the ends of the shoes.

One common adjuster is provided for both shoes in the rear brake assembly and the adjustment for both rear wheels is identical. After adjustment the brake pedal should be applied hard two or three times to centralise the brake shoes in their drums.

Bleeding the Brakes: If any part of the hydraulic brake system has been disconnected, it will be necessary to bleed the system when the connections have been reassembled, to ensure that the hydraulic fluid is free of air bubbles.

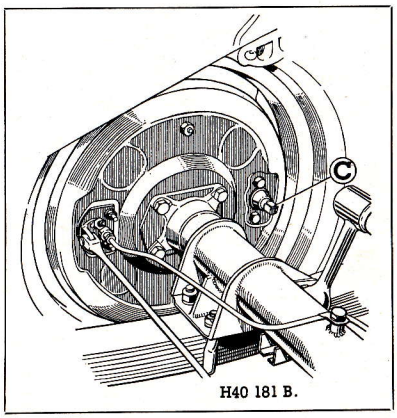
There is one bleed nipple fitted on the brake back plate assembly at each wheel.



H40 177 A

THE FRONT BRAKES

A and B are the two hexagon-shaped adjusting points to be found on each front backing plate.



H40 181 B.

THE REAR BRAKES

C is the square-ended adjuster to be found on the forward side of the axle on each rear backing plate.

Connect a rubber drain tube to one of the brake bleed nipples and immerse the open end of the tube in a jar partly filled with genuine braking fluid. Then fit a spanner on the hexagon sides of the bleed nipple and unscrew the nipple one full turn. The brake pedal should now be applied repeatedly with slow, full strokes until the fluid entering the jar from the drain tube is completely free of air bubbles. The bleed nipple should now be tightened with the spanner during a down stroke of the brake pedal. Repeat the whole operation on the other wheels.

It is important when bleeding the brakes to check the fluid level in the supply tank at frequent intervals and to top-up as necessary to ensure that the master cylinder is never starved of fluid. Should air reach the master cylinder from the supply tank it will be necessary to bleed the whole of the system again.

Fluid which has just been bled from the system should never be used for topping-up the supply tank immediately, since it will be to some extent aerated. It must therefore be allowed to stand for an hour or two before it can safely be used again. Dirty fluid must be discarded since grit or other foreign matter in the system will seriously affect braking efficiency, and cause unnecessary wear.

TYRES

A TYRE that loses more than three to four pounds per square inch in a week should be suspected of a slow puncture, but first make sure that the valve is not the cause. The pressures given below should be maintained to ensure long life to the tyres and best running and riding conditions for the vehicles.

N.B.—The front and rear tyres, on the side nearer to the curb, should be inflated to a pressure of 2/3 lbs. per sq. in. above the pressure in the tyres on the opposite side.

The benefit of this differential pressure will be found in easier handling and less tyre wear, particularly in countries where roads are winding and heavily, or only moderately, cambered.

Model	Rim Sizes	Tyre Sizes	Pressure in lbs. per square inch			
			2 Passengers only		Full Load	
			Front	Rear	Front	Rear
Saloon ..	16—3.00	5.25—16	22	24	24	26
Sports ..	16—3.00	5.25—16	21	24	23	26
Countryman	17—3.25	5.00—17			24	36
Van ..	17—3.25	5.00—17			24	36
Pick-up ..	17—3.25	5.00—17			24	36

The tyres should be changed over at regular intervals to give each tyre the chance of giving the maximum service with even wear. To do this, every 2,000 miles, with the left side jacked up, place the spare on the left side rear. Move left side rear to left side front.

Jack up the right side. Move left side front to right side front, right side front to right side rear, and right side rear to spare.

This gives each tyre a new position each move, and includes a period of rest during one full circuit.

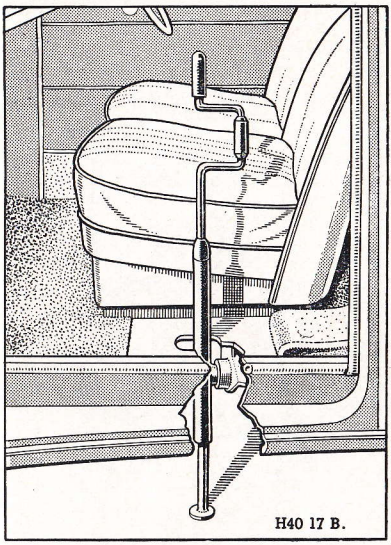
JACKING

THE jacking of the Saloon and Coupé is effected by a Stevenson telescopic jack which operates from a central body mounting bracket on the chassis frame. There are two positions for the jack, enabling either the right of left side of the vehicle to be raised.

Operation: To jack up the Saloon first apply the handbrake and then lower the Stevenson jack into position, through either the left or right opening in the floor of the vehicle at the side of the front seats.

Ensure that the boss on the jack fully engages with the recess in the chassis frame body mounting bracket and that the base of the jack has a firm footing on the ground; then proceed to wind down the jack with the wheelbrace.

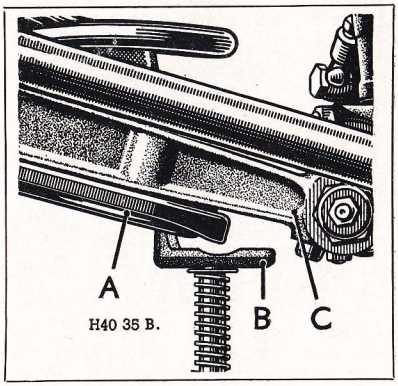
Immediately the vehicle is felt to lift, again check that the boss is correctly located in the chassis socket.



THE STEVENSON JACK

The boss on the jack body locates in the socket in the body-mounting bracket.

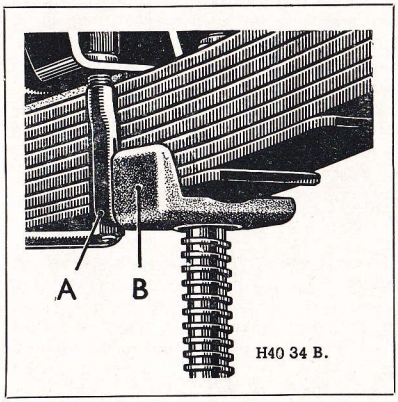
Jacking Points for Under-Axle Type Jack: This type of jack is issued with the Van, Countryman, and Pick-up and only the following illustrated positions should be used when jacking one of the above vehicles. For the front wheels the lifting



JACKING A FRONT WHEEL

A is the spring lower plate, B the jack platform, and C the front wishbone link.

platform of the jack should be placed across the outer rim of the spring lower plate, so that the lipped end projects into the recess in the spring plate, and the flat end is between the two bottom wishbone links.



JACKING A REAR WHEEL

The lip of the jack (B) should be on the outside of the spring, and against the U-bolt (A).

There is a recess across the jack lifting platform, which allows the strengthening ring on the spring plate to locate.

For lifting the rear wheels, place the lifting platform across the lowest spring leaf, to the rear of the axle, with the lipped end on the outside of the spring and up against the spring U-bolt; this avoids any turning movement.

The jack is operated with the vehicle starting handle, an intermediate length of rod being provided with the jack to allow it to reach the described positions easily.

Changing a Wheel: Before removing a wheel ensure that the vehicle is securely jacked with the handbrake firmly on and if on a hill it may be advisable to scotch one or both of the wheels.

For access to the wheelnuts lever out the wheel centre by inserting either a coin or a screwdriver in one of the slots under its rim.

When refitting the wheel, tighten the nuts alternately and securely before removing the jack. Finally test the nuts with the wheel on the ground.

FUEL SYSTEM

THE FUEL PUMP is bolted to the engine low down on the left side, and has an inlet pipe from the rear tank and an outlet pipe to the carburetter. The priming lever is on the side. When reaching towards the pump remember that it is close to the exhaust pipe, which may be hot.

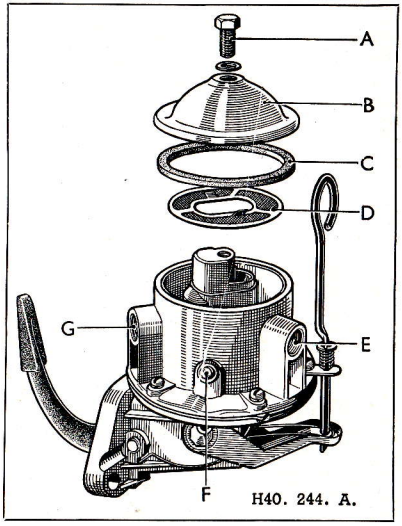
If petrol appears to be leaking at the edge of the diaphragm tighten the cover screws alternately and securely. Sometimes such leakage may actually come from one of the pipe fittings, causing the fuel to run down the pump and collect round the diaphragm flange.

Fuel pump service is available at all Austin dealers and A.C. service stations. They are stocked with parts and fittings for any repairs and adjustments that may become necessary.

The Carburetter is of the Zenith down-draught type and apart from the occasional cleaning of the inlet pipe filter and the jets as outlined in "Regular Attentions," should need little maintenance.

Controls: From time to time it may be advisable to ensure that the choke and throttle controls are operating freely—the strangler flap must open and close fully, and the throttle control must return fully against its stop in the idling position.

Slow Running: The slow running of the engine is controlled by an air mixture screw and a throttle stop adjusting screw. The screw is normally set one and a half turns from the fully closed position and the throttle stop adjusting screw is set to give the smoothest idling speed, consistent with a quick response from the engine to a sudden opening of the throttle, when the engine is warm.



THE A.C. PETROL PUMP

A—Retaining setscrew. B—Top cover. C—Cork joint washer. D—Filter. E—Fuel inlet. F—Drain plug. G—Fuel outlet.

A weak mixture may cause uneven slow-running and this may be corrected by turning the air regulating screw clockwise to enrich the mixture. Do not make the mixture too rich or the engine will tend to choke when running slowly.

ELECTRICAL EQUIPMENT

SHOULD any fault develop the owner is advised to contact an Austin dealer or the nearest Lucas service depot. The following are adjustments and replacements which an owner should be able to undertake.

Battery: Keep the terminals and battery top clean. Also ensure the security and good electrical contact of the battery positive earthing clip on the engine rear mounting plate, and chassis member.

Headlight Adjustment: The alignment of the lamps is very easily carried out. The lamp beams must be set straight ahead, parallel to the road and to each other.

To carry out the adjustment, proceed as follows:—

Remove the front rim by unscrewing the rim securing screw and lifting off the rim. Next remove the rubber dust excluder, when three spring-loaded adjustment screws will be visible, by means of which the setting can be altered as desired. For example, if the beam needs swinging to the left, the screw on the left side of the Light Unit must be tightened.

No focusing device is necessary with this type of lamp, since the bulb is manufactured in such a way that the filament is always positioned correctly with respect to the focal point of the reflector.

Removal of Light Unit: To remove the Light Unit, remove the front rim and dust excluding rubber as previously described above. Press the Light Unit in against the tension of the adjustment screw springs and turn it in an anti-clockwise direction until the heads of the screws can be disengaged from the slotted holes in the Light Unit rim. Do not disturb the setting of the screws when removing the Light Unit or the alignment will be altered.

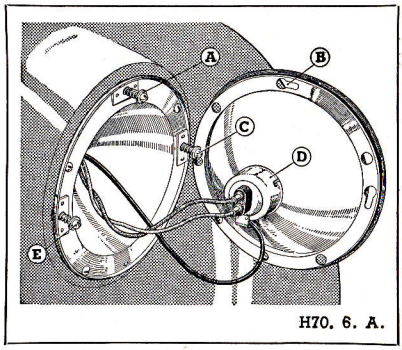
The bulb is made accessible by removal of the back shell at the rear of the reflector.

Bulb Fitting:

Headlights: Remove the light rim as described under "Headlight Adjustment" to gain access to the bulbs.

Undo the bayonet catch at the back of the reflector, and the headlight bulb can be removed.

Sidelights: Remove the screw at the back of the sidelight and withdraw the lamp front. The bulb is now accessible and can be released from its holder.



HEADLIGHT ADJUSTING

A, C and E are three adjusting screws, and B a slot. D is the bayonet cap and bulb holder.

Stop- and Tail-lights: Move back the rubber lip, insert a coin or screwdriver blade under the glass retaining collar and gently lever the collar out from the lamp body. This will enable the lamp glass to be completely removed, leaving the bulb accessible in its socket.

Stop- and Tail-Light (Commercial Vehicles): Bulb replacement in the combined stop- and tail-light can be effected by unscrewing the single fixing screw and swinging aside the cover.

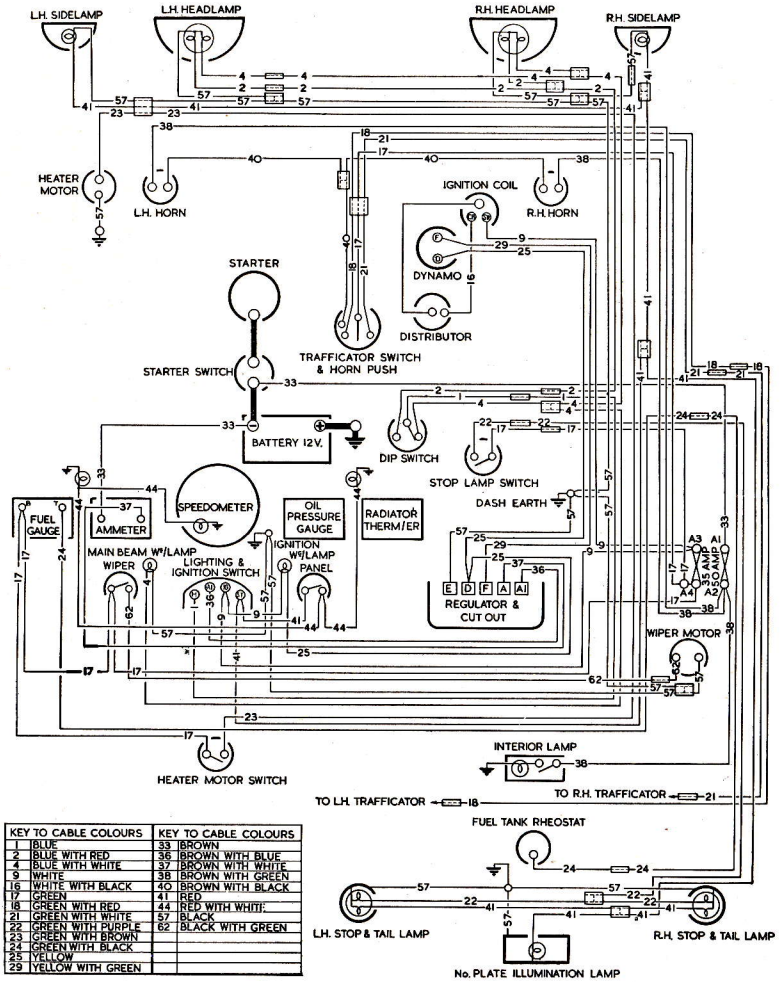
Rear Number Plate Light (Saloon and Coupé): Undo the one bolt and the cover can be removed to give access to the bulb.

Panel Lights: The holders can be pulled from their fittings at the back of the instrument panel and the bulbs are then easily removed.

Roof Light: To gain access to the bulb press in the sides of the plastic light cover and pull downwards. This will release the cover from its fastenings and expose the bulb.

Ignition, Oil Pressure and Headlight Beam Warning Lights: The bulbs can be unscrewed from their holders when pulled out from the back of the warning light panel.

WIRING DIAGRAM

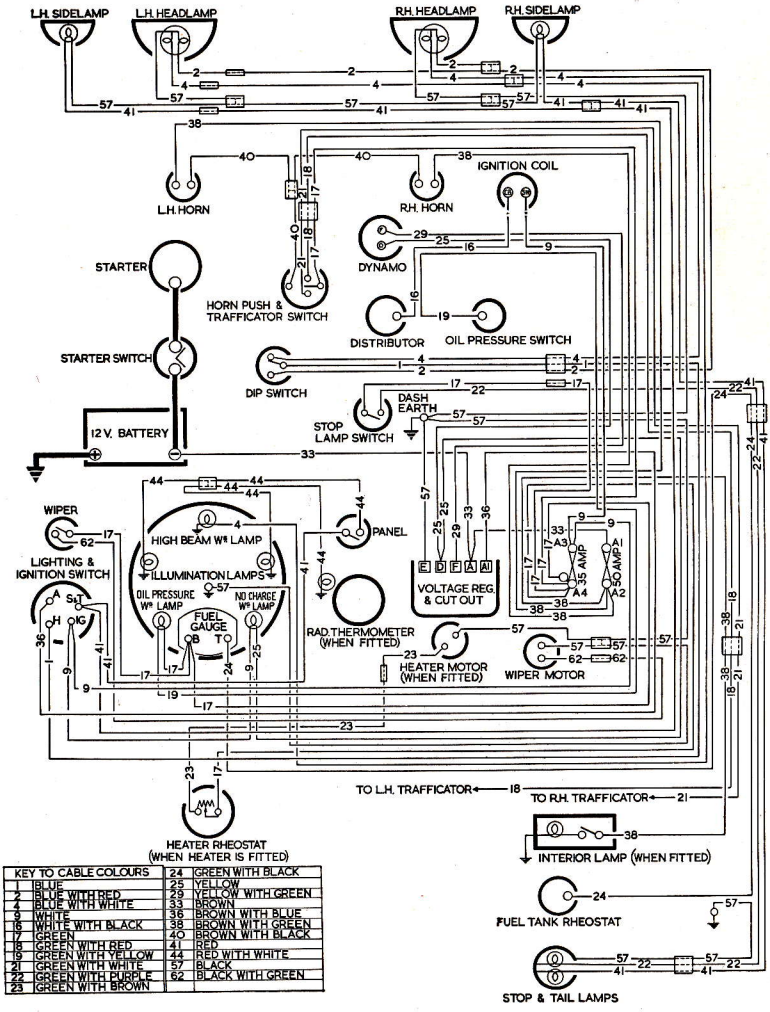


KEY TO CABLE COLOURS		KEY TO CABLE COLOURS	
1	BLUE	33	BROWN
2	BLUE WITH RED	36	BROWN WITH BLUE
4	BLUE WITH WHITE	37	BROWN WITH WHITE
9	WHITE	38	BROWN WITH GREEN
16	WHITE WITH BLACK	40	BROWN WITH BLACK
17	GREEN	41	RED
18	GREEN WITH RED	44	RED WITH WHITE
21	GREEN WITH WHITE	57	BLACK
22	GREEN WITH PURPLE	62	BLACK WITH GREEN
23	GREEN WITH BROWN		
24	GREEN WITH BLACK		
25	YELLOW		
29	YELLOW WITH GREEN		

E 1265

THE 'A40' SOMERSET SALOON

WIRING DIAGRAM



KEY TO CABLE COLOURS			
1	BLUE	24	GREEN WITH BLACK
2	BLUE WITH RED	25	YELLOW
4	BLUE WITH WHITE	29	YELLOW WITH GREEN
9	WHITE	33	BROWN
16	WHITE WITH BLACK	36	BROWN WITH BLUE
17	GREEN	38	BROWN WITH GREEN
18	GREEN WITH RED	40	BROWN WITH BLACK
19	GREEN WITH YELLOW	41	RED
21	GREEN WITH WHITE	44	RED WITH WHITE
22	GREEN WITH PURPLE	57	BLACK
23	GREEN WITH BROWN	62	BLACK WITH GREEN

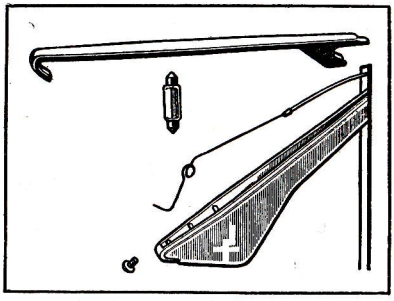
E1255

THE 'A40' VAN, COUNTRYMAN AND PICK-UP

Direction Indicators: To remove a bulb, switch on the indicator, hold it in the out position and then switch off. Withdraw the screw on the underside of the arm and slide off the metal plate, when the bulb can be renewed. When replacing the metal plate, slide it in an upward direction so that the plate engages with the slots on the underside of the spindle bearing.

Fuses: The fuse unit is situated adjacent to the voltage regulator on the right-hand side of the engine bulkhead and contains two fuses and two spare.

One fuse protects the accessories which are operative only when the ignition is switched on (e.g., stop-lights, fuel gauge, and direction indicators). The other fuse protects those accessories which can be operated independently of the ignition. If a new fuse blows, the cause of the trouble must be found.



H10 181 A.

THE DIRECTION INDICATOR

Do not lift the arm. Switch on and let the arm go up, hold the arm out and switch off.

BULBS	Volts	Watts	Lucas No.
Headlights:—			
HOME:	12	42/36	354
EXPORT:			
(R.H.)	12	42/36	354
(L.H.)	12	42/36	355
EUROPE (except France)	12	35/35	350
Sidelights	12	6	989
Stop- and Tail-Lights (Saloon and Coupé)	12	18/6	361
Stop- and Tail-Lights (Commercial Vehicles)	12	6	207
Number Plate Illumination Light	12	6	989
Panel Lights	12	2.2	987
Ignition; Oil Pressure and Headlight Beam Warning Lights	12	2.2	987
Trafficators	12	3	256
Roof Light	12	6	354

FUSES	
Accessories (Aux).	50 amps.
Accessories (Aux. Ign.)	35 amps.

BODYWORK

DUST on the vehicle may be lightly flicked off with a duster, but on all other occasions the vehicles should be thoroughly washed and dried before a non-abrasive polish is used. Any attempt to rub dirt off the vehicle will result in severe scratching of the smooth surface of the high lustre enamel. Grease and tar splashes must be very carefully removed with a soft rag dipped in petrol.

The Coupé Hood (*Manually Operated*): Opening or closing the hood of the coupé is a simple operation, involving only a few seconds either way.

By unscrewing the two cantrail knobs, one at each side of the hood, the knee-action cantrails can be unlocked and pulled inwards. The hood can then be rolled up tightly until it nests on the peakrail, in which position it can be strapped. This gives a partly open "de ville" position exposing only the front two seats.

For complete opening, depress the waist controls, one at each side of the rear seat, hinge the rear seat squab forward, and lower the hood into the well provided.

To close the hood, hinge the rear seat squab forward, lift hood from well, and then rest it on the seat squab. Next, using the handles provided, raise the hood to the

"de ville" position and slam hood locks. Finally, unstrap the hood front, push out the cantrails, locate the guide pins in the screen plates, and securely screw up the cantrail knobs.

(*Power Operated*): Opening the power-operated hood to the "de ville" position involves exactly the same procedure as that given for the manually-operated hood. From the "de ville" to the fully open position it then is only necessary to press the lower button (situated below the instrument panel in front of the driver) until the warning light glows.

To close the hood, press the upper button until the warning light glows (whereupon the hood will be once again in the "de ville" position), after which the procedure is identical to that given for the manually-operated hood.

The hood should be cleaned regularly, particularly when it is new, to combat any initial chemical reaction which may occur during its early life.

To clean the hood, it is only necessary to use soap and water, with a soft brush to remove any ingrained dirt. Frequent washing with soap and water considerably improves the appearance and wearing qualities of the hood, and it should be washed at least as often as the rest of the car.

If dust and grime have been allowed to remain on the hood for a long time so that it has become really dirty, and the ordinary soap and water method is not completely effective, then benzine may be used with the same type of brush.

The interior of the hood can be cleaned by the sparing use of tetraethylene or a reputable brand of proprietary clothes cleaner. On no account should spirit cleaners be used inside the hood as their use would damage the proofing and wearing qualities of the fabric.

It will be found that by cleaning by the methods outlined, the hood will continue to look as good as new.

Washing and Polishing (*All Models*): Frequent washing with clean cold water will greatly assist in maintaining the high lustre finish of the paintwork.

When washing the vehicle, start at the top and work downward, using a slow flow of water and a sponge free from grit and oil. Leather off all surplus moisture.

Should the finish become dull after several months the use of a liquid polish of reputable manufacture will restore it to its original condition. An occasional application of a good quality wax polish, after the vehicle has been thoroughly washed and cleaned, will help considerably towards preserving the vehicle's appearance.

Chromium plated parts should be washed with soap and warm water and cleaned with a damp leather. On no account should metal polish or any kind of abrasive substance be used.

The leather upholstery and trimming may be cleaned with a damp cloth and polished when dry with furniture cream.

The roof lining can be kept in good condition by light brushing or by using a vacuum cleaner if available.

The carpets should be kept free from dust and grit by vigorous brushing with a stiff brush or by using a vacuum cleaner. Periodically the carpets and felts should be removed and thoroughly beaten.

Other Attentions: Door locks, hinges, and other small working parts should be given a drop of oil occasionally and checked for security. Sliding seat runners will benefit if very lightly smeared with grease periodically, but never grease the runners of the sliding roof.

AFTER SALES SERVICE

AUSTIN dealers are under agreement to give "After Sales Service" once, and, during the period of the first thousand miles running of Austin vehicles purchased from them they will, without charge, except for materials used:—

Change the engine oil and check the oil levels in the gearbox, steering box, and rear axle.

Lubricate all chassis points.

Check the tightness of cylinder head and manifold nuts. Tighten the fan belt if necessary.

Check tappet clearances and ignition timing.

Clean out the carburetter float chamber and check the slow running adjustment.

Examine and adjust if necessary, the sparking plug and distributor points and verify the working of the automatic ignition control.

Check the front wheel alignment and steering connections.

Check the clutch pedal clearance.

Examine and adjust the braking system.

Check the tightness of nuts and bolts, body and bonnet cowl to chassis, spring clips, etc.

Lubricate the door locks, bolts, hinge pins and seat runners.

Test the lamps, check the charging rate, wiring and terminals.

Examine the battery and bring up to the proper level with distilled water or diluted acid.

Test the tyres for correct pressure.

THE AUSTIN 'A40' SPORTS

THE following information relates, in general, to those items and attentions on the Austin 'A40' Sports which vary from the Saloon Model. It must, therefore, be used in conjunction with the preceding 'A40' Maintenance Instructions, in order that the vehicle may receive all the periodical attentions necessary to maintain its operating efficiency.

CONTENTS

GENERAL INFORMATION

General Dimensions
Overall length—13ft. 3½ins. (4m.). Overall width—5ft. 1in. (1m. 54cm.). Overall height—4ft. 9ins. (1m. 43cm.) Wheelbase—7ft. 8½ins. (2m. 35cm.). Track (front)—4ft. 0½in. (1m. 22cm.). Track (rear)—4ft. 2ins. (1m. 26cm.). Ground clearance—6¾ins. (17cm.). Turning circle—37ft. (11.27m.). Approx. weight—18 cwts.

Engine
No. of cylinders—4. Bore—2.578ins. (65.48mm.). Stroke—3.5ins. (89mm.). Cubic capacity—73.17 cu. in. (1,200 c.c.). B.H.P.—46 at 5,000 r.p.m.; Max. torque —59 lbs. ft. at 2,400 r.p.m. Compression ratio—7.2 to 1. Firing order—1-3-4-2. Valves—Overhead, push-rod operated. Timing—Inlet opens 5° B.T.D.C., closes 45° A.B.D.C.; exhaust opens 40° B.B.D.C., closes 10° A.T.D.C. Inlet and exhaust clearances (hot or cold)—.015 in. Engine No.—Located on right side of cylinder block, adjacent to cylinder head.

Lubrication
Pump—Gear type. Pressure (hot)—40-45 lbs. per sq. in. Filter—By-pass type. Sump capacity—7 Imp. pints (4 litres).

Fuel System
Pump—A.C. Sphinx mechanical type "T". Carburetters—Twin S.U.s inclined at 20° to horizontal. Jet needle—Model E.K. Tank capacity—8¾ Imp. gallons (37 litres).

Cooling System
Circulation—Centrifugal pump and fan. Temperature control—Thermostat. Normal operating temperature—164°F. Capacity—14 Imp. pints (7.3 litres).

Ignition
Type—Lucas 12 volt. Coil—Lucas, type B.12. Distributor—Lucas, type DM2. Contact breaker gap—.014-.016in. Timing—1/4 mark on flywheel. Sparking plugs—Champion N.A.8. Long Reach. Plug gap—.025in.

Clutch
Type—Borg & Beck single dry plate. Diameter—7¼ins. Pedal free movement —¾in.

Gearbox
Type—4-speed synchromesh (on 2nd, 3rd and top) with steering column mounted gear lever. Gear ratios—1st, 3.89 to 1; 2nd, 2.44 to 1; 3rd, 1.54 to 1; top, 1 to 1; reverse, 5.39 to 1. Oil capacity—3 Imp. pints (2 litres).

Propeller Shaft
Type—Hardy Spicer open shaft with needle roller bearing universal joints.

Rear Axle
Type—Spiral bevel three-quarter floating. Oil capacity—2¼ Imp. pints (1.28 litres). Overall gear ratios—1st, 20.08 to 1; 2nd, 12.5 to 1; 3rd, 7.85 to 1; top, 5.14 to 1; reverse, 26.6 to 1.

Steering
Type—Special Cam Gear with 14 to 1 ratio. Adjustment—Screw and shim.

Suspension
Front: Type—Independent by coil springs and wishbones. Castor angle—2¼°. Camber angle—1°. Swivel pin inclination—6½°. Track toe-in—1/16th to 1/8th in.

Rear: Type—Semi-elliptic underslung reverse camber leaf springs.

Shock Absorbers
Front: Type—Girling double-acting hydraulic piston.

Rear: Type—Armstrong double-acting hydraulic piston.

Brakes
Foot Brake: Type—Girling Hydraulic with two leading shoes on front wheels. Drum diameter—10ins. Pedal free movement—⅛in.

Handbrake: Type—Pistol grip operating mechanically on rear wheels.

Wheels
Type—16 × 3.00 pressed steel disc.

Tyres
Type—Dunlop 5.25-16 Extra Low Pressure. Pressures (2 passengers only)—21 lbs. per sq. in. front; 24 lbs. per sq. in. rear. Pressures (full load)—23 lbs. per sq. in. front; 26 lbs. per sq. in. rear.

Jacking System

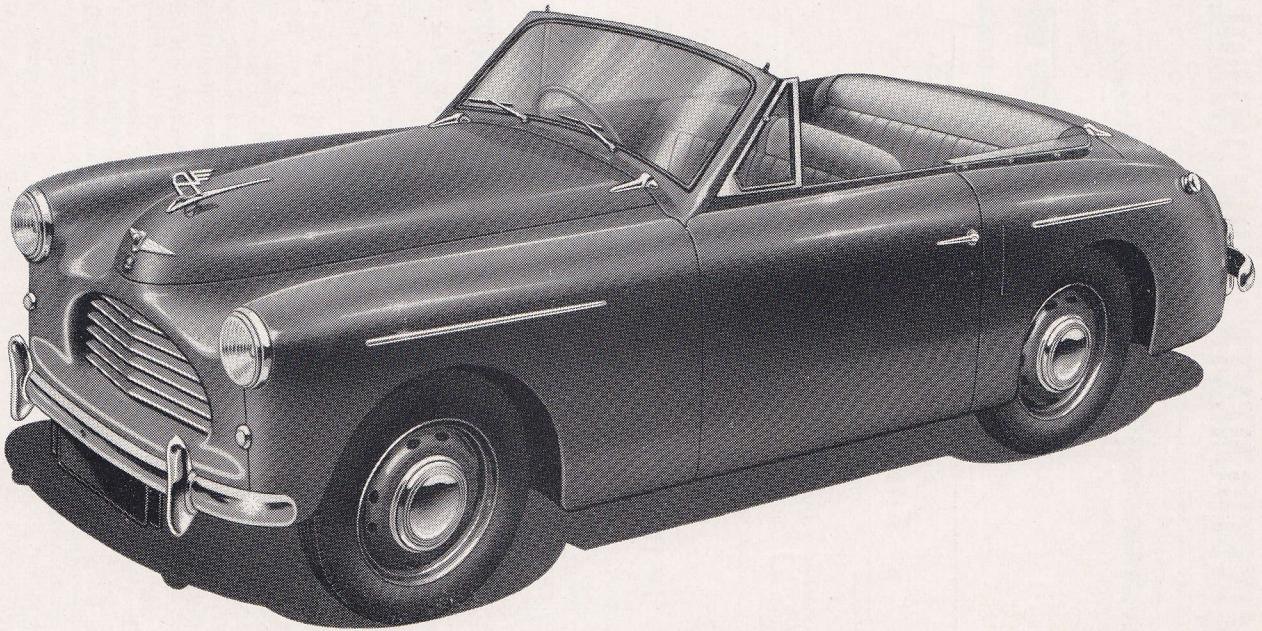
Type—Stevenson, operated by wheel-brace from inside car.

Chassis Frame

Type—Welded pressed steel with full length box section side, front and rear cross members, stiffened by cross bracing. Chassis No.—Located on frame, adjacent to the engine front mounting bracket on the side opposite to the steering gear.

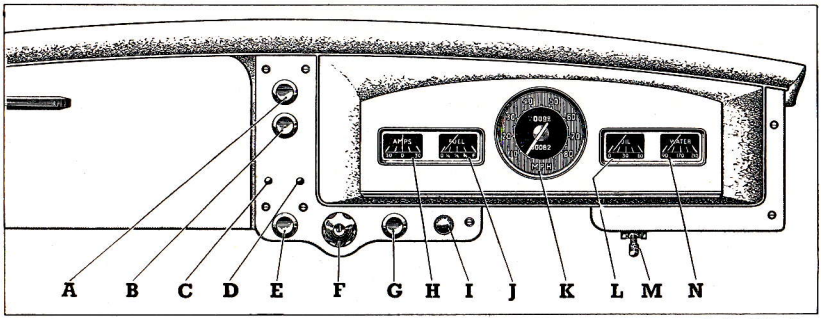
Electrical Equipment

Type—Lucas 12 volt. Battery—Lucas G.T.W. 7A. Capacity—38 amp. hrs. at 10 hr. rate. Dynamo—Lucas, type C39PV/2. Starter Motor—Lucas, type M35G. Cut-out and Regulator—Lucas, type RB106. Fuse unit—Lucas, type SF6. Horns—Lucas Windtone, type WT614. Direction Indicators—Lucas, type SF80. Windscreen wipers—Lucas, type CRT.



THE AUSTIN 'A40' SPORTS MODEL

INSTRUMENTS AND CONTROLS



H40. 226. A.

THE INSTRUMENT PANEL

A—Windscreen wiper control.
B—Panel light switch.
C—Headlight beam warning light.
D—Ignition warning light.
E—Starter control.
F—Ignition and lighting switch.
G—Choke control.
H—Ammeter.
I—Heater motor control.
J—Fuel gauge.
K—Speedometer.
L—Oil pressure gauge.
M—Speedometer trip control.
N—Water temperature gauge.

INSTRUMENTS

Speedometer: Registers the vehicle speed and total mileage. The trip figures at the top of the speedometer can be set to zero by pushing up the knob at the bottom (right) of the speedometer, and turning it to the left.

Oil Pressure Gauge: Indicates the oil pressure in the engine. It does not show the quantity of oil in the sump.

Ammeter: Indicates the flow of current into or out of the battery. With the automatic voltage control system little or no charge is shown when the battery is well charged.

Ignition Warning Light: Glows red when the ignition is switched "on" and fades out when the dynamo is charging the battery.

Headlight Beam Warning Light: A red glow appears when the full headlights are switched on, with the two beams full ahead. The light goes out when the headlights are dipped.

Fuel Gauge: Indicates the contents of the tank when the ignition switch is on. When the tank is being filled, switch off and stop the engine. Switch on again and the needle will record the amount of fuel entering the tank.

Water Temperature Gauge: This records the temperature of the cooling water circulating in the cylinder block and radiator. The correct operating temperature under normal conditions should not be below 164°F.

HAND CONTROLS

Choke Control: Pull the control out to its limit when starting the engine from cold. Once the engine is running, push in the choke control completely as soon as the engine will run without its use.

Ignition Switch: Turn the key clockwise to switch on. Do not leave the switch "on" when the vehicle is stationary—the red warning lamp is a reminder. The ignition key may also be used for locking the driver's door and the luggage boot.

Lighting Switch: This is the centre moulding which surrounds the ignition switch. Turn clockwise to the first notch to put on the sidelights, and to the second to put on the headlights. The headlights are dipped by foot operation.

Starter Switch Knob: Pull out the control knob to start, and release as soon as the engine fires. If the engine fails to start after a few revolutions, do not

operate the starter again until the engine is stationary.

Heater Control Switch: Turn to the right until a click is heard. This starts the heater fan. The further the control is turned the less will be the speed of the fan, due to the fact that a rheostat is incorporated.

Windscreen Wipers: To start the electric wipers gently pull out the wiper control. To park, switch off by pressing the control inwards when the arms are at the end of the stroke. Do not try to push the arms across the windscreen by hand.

Panel Light Switch: Pull out the switch control knob to illuminate the instruments. Only operates when the side-lamps are "on".

REGULAR ATTENTIONS

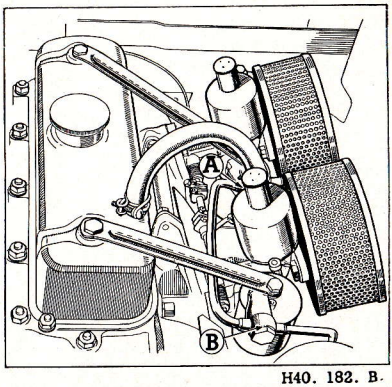
THE following list of attentions are those which cover components or accessories not common to the 'A40' Saloon and Commercial Vehicles.

All other attentions should be carried out as recommended in the previous pages.

EVERY 2,000 MILES

Carburetters: Remove the knurled cap at the top of each carburetter and add a few drops of oil to the suction piston dampers.

Air Filters: Access to the filter element is gained by removing the top cap, which involves the release of only one screw. Withdraw the element, hold upright and tap gently or brush lightly on outside. If compressed air is available, the element can be effectively cleaned by directing a jet of air on to the inside surface of the filtering material, thereby blowing out the dust particles impinged on the outer surface. Any element contaminated with oil, grease, paint, etc., should be washed thoroughly in petrol or other suitable solvent and allowed to dry before being replaced.



H40. 182. B.

THE AIR FILTERS

A and B are the two fuel intakes to the carburetters which should be checked for tightness occasionally.

EVERY 5,000 MILES

Carburetters: The flow of fuel at the carburetter inlet unions to the float chambers should be checked, and, if necessary, the filters in those unions should be cleaned.

Disconnect the float chamber fuel supply pipes (when the filters may be taken out and cleaned), slacken the float chamber cap nuts, and unscrew the float chamber holding-up bolts. The chambers themselves can then be removed for cleaning.

Be careful not to lose the float levers, pins and needles.

EVERY 10,000 MILES

Carburetters: Clean out the suction assembly by removing the two securing screws and lifting off the body in the same plane to avoid damage to the needle.

Lift out the hydraulic damper and wash the assembly in petrol. Dry thoroughly, refit, and replenish the damper with oil. When fully re-assembled, lift the piston to its fullest extent, thus expelling the surplus oil through the top cap, and at the same time lubricating the rod.

Air Filters: Remove the top caps, withdraw the elements and replace with new ones.

This is the only part which requires lubrication, the piston itself and the inside of the suction chamber should be left dry.

The Air Filters: Remove the top caps, and renew the elements.

Sparking Plugs: Renew the sparking plugs, using only Champion NA8 Long Reach. The gaps of these plugs should be maintained at .025in.

GENERAL MAINTENANCE

THE following information covers those attentions essential to the satisfactory operation of the car, and which are not already mentioned in the list of "Regular Attentions" or "Service Attentions" given for the 'A40' Somerset.

FUEL SYSTEM

THE CARBURETTERS

The twin S.U. Carburetters are carefully balanced to ensure that the engine runs perfectly, and it is therefore important that only qualified people are allowed to attend to any major faults:—

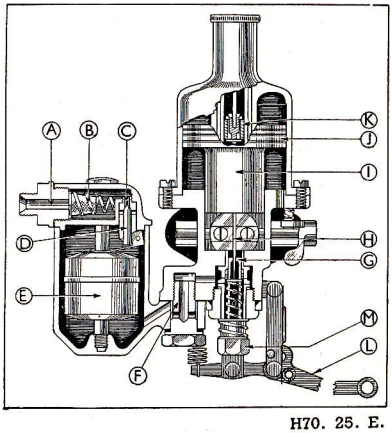
Should the engine run badly, after having previously given good results, look for a minor fault and not a major one.

The two regular maintenance attentions necessary are listed under "Every 2,000 and 5,000 Miles", and are (1) oiling the piston dampers and (2) cleaning the inlet filters.

To obtain the best results always maintain the carburetters in a scrupulously clean condition, and occasionally lubricate the throttle spindles and choke linkages with oil.

In the event of poor running, first make sure the pistons are able to move freely; if they are not, the causes may be as follows:—

1. Dirt in the suction chambers, the cure for which is given under "Every 10,000 Miles".
2. A bent hydraulic damper spoke. Cure: Straighten or replace.
3. A bent jet needle. Cure: Replace. Straightening is not recommended, except in an emergency.
4. An incorrectly centred jet. Cure: Re-centre in the following manner:— Screw the jet-adjusting nut to its weakest position and slacken the jet screw. Gently tap the jet head until the piston falls freely, striking the bridge with an audible click while gradually re-tightening the jet screw.



H70. 25. E.

THE S.U. CARBURETTER

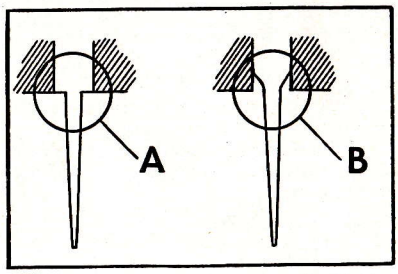
A—Banjo type union. B—Strainer and spring. C—Valve opening. D—Needle valve. E—Float. F—Float chamber union securing bolt. G—Main jet. H—Tapered needle (Model E.K.). I—Piston. J—Suction disc. K—Hydraulic damper. L—Choke lever. M—Main jet adjusting nut.

If the first effort is not successful, repeat the process.

To Adjust the Carburetters: The only adjustments are by means of the jet adjusting nuts and the throttle stop screws. First synchronise the throttle by slackening one of the spindle universal joint clamp screws, unscrewing both throttle-stop screws and shutting both completely —then re-tighten the clamp screw.

Another method is to listen to the hiss of each carburetter with a piece of tube, one end of which should be placed

adjacent to the carburetter intake and the other in the ear, then adjust throttles until the hiss is equal. Now lift the piston of each carburetter in turn; if this causes the engine to speed-up, the mixture is too strong and the jet adjusting nut should be screwed up. If the engine stops immediately the mixture is too weak and the jet should be lowered (unscrewed). If the engine just falters or continues to run, but unevenly, then the adjustment is correct. The only method of altering the mixture strength throughout the whole speed range is by changing the jet needles. To do this, remove the two screws round the base of the suction chamber, then lift off the whole assembly, taking the utmost care not to bend the needle. Slacken the needle grub screw and withdraw the needle: it should be refitted with its shoulder flush with the face of the piston. Some needles are made on a watchmaker's lathe and have square shoulders; others on a centreless grinder and have round shoulders, the part constituting the shoulder is shown in the illustration.



H70. 24. B.

THE CARBURETTER NEEDLE

A and B show the correct fitting for the two types available.

ELECTRICAL EQUIPMENT

SHOULD any fault develop the owner is advised to contact an Austin dealer or the nearest Lucas service depot. The following are adjustments and replacements which an owner should be able to undertake.

Battery: Keep the terminals and battery top clean. Also ensure the security and good electrical contact of the battery positive earthing clip on the engine rear mounting plate, and chassis member.

Headlight Adjustment: The alignment of the lamps is very easily carried out. The lamp beams must be set parallel to the road and to each other.

To carry out the adjustment, proceed as follows:—

Remove the front rim by unscrewing the rim securing screw and lifting off the rim. Next remove the rubber dust excluder, when three spring-loaded adjustment screws will be visible, by means of which the setting can be altered as desired. For example, if the beam needs swinging to the left, the screw on the left side of the Light Unit must be tightened.

No focusing device is necessary with this type of lamp, since the bulb is manufactured in such a way that the filament is always positioned correctly with respect to the focal point of the reflector.

Removal of Light Unit: To remove the Light Unit, remove the front rim and dust excluding rubber as previously described above. Press the Light Unit in against the tension of the adjustment screw springs and turn it in an anti-clockwise direction until the heads of the screws can be disengaged from the slotted holes in the Light Unit rim. Do not disturb the setting of the screws when removing the Light Unit or the alignment will be altered.

The bulb is made accessible by removal of the back shell at the rear of the reflector.

Bulb Fitting:

Headlights: Remove the light rim as described under "Headlight Adjustment" to gain access to the bulbs.

Undo the bayonet catch at the back of the reflector, and the headlight bulb can be removed.

Sidelights: Move back the rubber lip at the bottom of the light and insert a coin under the glass rim. This allows the glass and rim to come completely away, leaving

the bulb in its socket. When replacing the rim and glass locate the top edge first, then allow the rubber lip or cup to overlap the rim, making a watertight joint.

Stop- and Tail-Lights: Move back the rubbber lip, insert a coin or screwdriver blade under the glass retaining collar and gently lever the collar out from the lamp body. This will enable the lamp glass to be completely removed, leaving the bulb accessible in its socket.

Rear Number Plate Light: Undo the one bolt and the cover can be removed to give access to the bulb.

Panel Lights: Access to the bulbs is gained by swinging aside the spring clips at the back of the instrument panel and pulling out the bulb holders, from which the bulbs may easily be unscrewed.

Ignition and Headlight Beam Warning Lights: The bulbs can be unscrewed from their holders when pulled out from the back of the warning light panel.

Direction Indicators: To remove a bulb, switch on the indicator, hold it in the out position and then switch off. Withdraw the screw on the underside of the arm and slide off the metal plate, when the bulb can be renewed. When replacing the metal plate, slide it in an upward direction so that the plate engages with the slots on the underside of the spindle bearing.

Fuses: The fuse unit is situated adjacent to the voltage regulator and cut-out on the right-hand side of the engine bulkhead and contains two fuses and two spare.

One fuse protects the accessories which are operative only when the ignition is switched on (e.g., stop-lights, fuel gauge, and direction indicators). The other fuse protects those accessories which can be operated independently of the ignition. If a new fuse blows, the cause of the trouble must be found.

BULBS			
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Headlights:—			
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EXPORT:			
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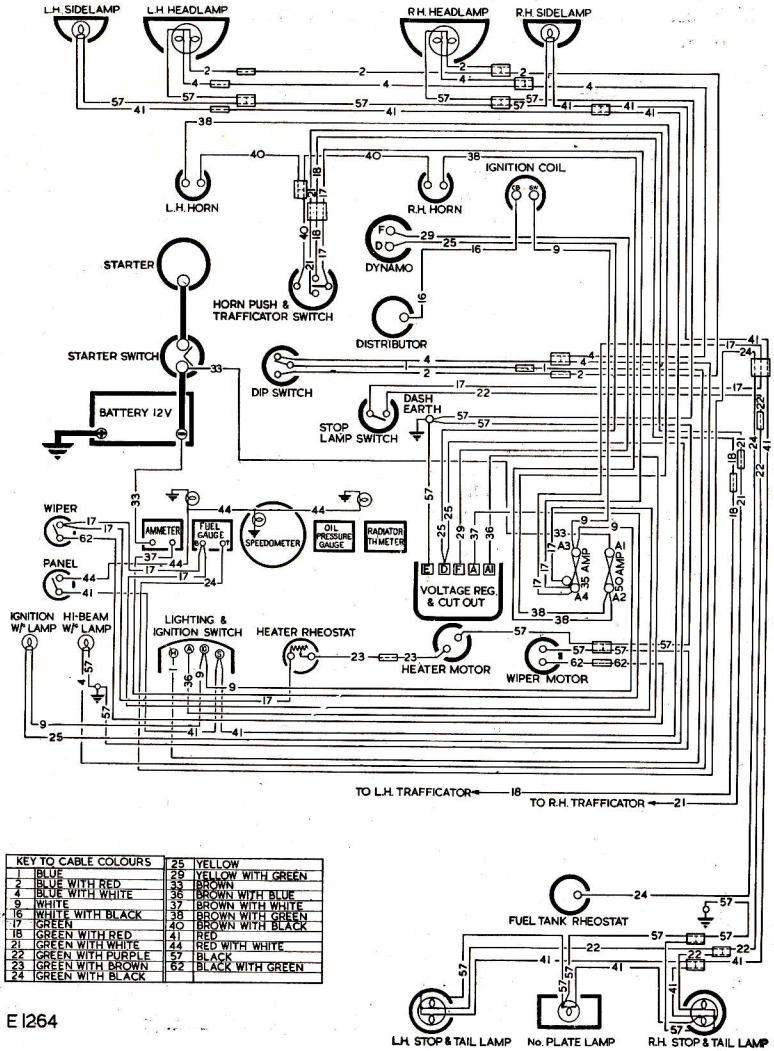

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E 1264

THE 'A40' SPORTS MODEL

BODYWORK

DUST on the car may be lightly flicked off with a duster, but on all other occasions the car should be thoroughly washed and dried before a non-abrasive polish is used. Any attempt to rub dirt off the car will result in severe scratching of the smooth surface of the high lustre enamel. Grease and tar splashes must be very carefully removed with a soft rag dipped in petrol.

The Hood: Before the hood can be lowered the following preliminary operations must be carried out:—

First, release all the hood fasteners at the rear of the car. Next pull the rear seat squab forward and remove the hood well side covers, after which the rear window must be separated from the hood, by releasing the top press studs, and then placed in the rear compartment of the hood well—this being most important if damage to the celluloid window is to be avoided.

Finally lift the hood clear of its two securing pegs situated above the windscreen.

The hood itself can now be lowered, although while doing so it will be necessary to press inwards on the jointed rear hood support, in order to prevent it fouling the rear edge of the hood well, and then downward pressure must be exerted on the top hood linkages in order to straighten them—this being most important if the hood is to take up its correct position in the well. Roll up the front part of the hood and stow it as far back as possible in the hood well. It is essential that the whole hood assembly be pressed very compactly into the well provided, in order that the rear seat squab may be returned to its normal position and fastened. Finally, secure the hood well side covers.

Raising the hood is an exact reversal of the above procedure.

The hood should be cleaned regularly, particularly when it is new, to combat any initial chemical reaction which may occur during its early life. To clean the hood it is only necessary to use soap and water and a stiff or semi-stiff brush of the nailbrush type. If dust and grime has been allowed to remain on the hood for a long time so that it has become really dirty, and the ordinary soap and water method is not completely effective, then clear methylated spirit or any other clear spirit such as Benzine may be used with the same type of brush. It will be found that by cleaning by the methods outlined the surface will continue to look as good as new.

Washing and Polishing: Frequent washing with clean cold water will greatly assist in maintaining the high lustre finish of the paintwork.

When washing the vehicle, start at the top and work downward, using a slow flow of water and a sponge free from grit and oil. Leather off all surplus moisture.

Should the finish become dull after several months, the use of a liquid polish of reputable manufacture will restore it to its original condition. An occasional application of a good quality wax polish, after the vehicle has been thoroughly washed and cleaned, will help considerably towards preserving the vehicle's appearance.

Chromium plated parts should be washed with soap and warm water and cleaned with a damp leather. On no account should metal polish or any kind of abrasive substance be used.

The leather upholstery and trimming may be cleaned with a damp cloth and polished when dry with furniture cream.

The carpets should be kept free from dust and grit by vigorous brushing with a stiff brush or by using a vacuum cleaner. Periodically the carpets and felts should be removed and throughly beaten.

Other Attentions: Door locks, hinges, and other small working parts should be given a drop of oil occasionally and checked for security. Sliding seat runners will benefit if very lightly smeared with grease periodically.

SERVICE FACILITIES

THE following are the official addresses of the Austin Motor Company Limited to whom all Service correspondence in those areas should be addressed.

England:

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In all instances, the enquirer is asked, first of all, to contact his nearest appointed Austin Distributor or Dealer before writing to one of the above addresses. The Service Departments of those Distributors or Dealers will offer all the help and information at their disposal.

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For owners' convenience, we give below the names and addresses of the manufacturers or suppliers of the goods in question. Further information may be obtained on application to them.

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